

# PUBLIC HEALTH REPORTS

VOL. 45

MARCH 7, 1930

NO. 10

## Resistance of Paramecium to Heat as Affected by Changes in Hydrogen-ion Concentration and in Inorganic Salt Balance in Surrounding Medium<sup>1</sup>

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It is well known that organisms differ in resistance to increased temperature. It is also apparent that this difference extends to tissues and cells of single organisms.

Schereschewsky (1928) has reported the selective destruction of malignant tumor tissue in mice by means of a high-frequency electric field. Experiments recently performed in this laboratory by Kahler, Chalkley, and Voegtlín (1929) have shown that the destruction of cells in such a field is a thermal effect. N. Westermark (1927) using diathermy was able to destroy malignant growths in rats without injury to surrounding normal tissue. The experiments of Lambert (1912) and of Rohdenberg and Prime (1921) prove that there exists a considerable difference in thermal death point between normal and tumor tissue.

Inasmuch as little is known as to the factors responsible for variation in cellular resistance to heat, and since knowledge of these factors may be of importance from a therapeutic standpoint, their determination constitutes a problem of considerable importance. The experiments here presented constitute an attempt to ascertain the effect of changes in hydrogen-ion concentration and in the inorganic salt balance of the surrounding medium on the resistance of cells to heat.

### MATERIAL AND METHODS

During the experiments of Kahler, Chalkley, and Voegtlín referred to above, it was noted that *Paramecia* from different cultures exhibited slight but noticeable differences in their resistance to heat. Since material was abundant, since its unicellular character made rapid and complete environmental change a simple matter, and since changes

<sup>1</sup> The problem discussed here originated at the instigation of Prof. Carl Voegtlín, Chief of the Division of Pharmacology, and the author wishes to express his thanks to Professor Voegtlín for his advice and suggestions during the progress of the investigation.

in its normal motility would serve as an excellent index of injury, *Paramecium caudatum* was used in these experiments. The *Paramecia* utilized were the progeny of a single cell.<sup>2</sup> Culture was made in glass crystallizing dishes, holding about 200 cubic centimeters, in saline solution composed of NaCl 0.1 gram, CaCl<sub>2</sub> 0.006 gram, KCl 0.004 gram, NaHCO<sub>3</sub> 0.004 gram, H<sub>2</sub>O 1,000 cubic centimeters. From 10 to 12 wheat grains were added to each culture. The hydrogen-ion concentration of the cultures was maintained at slight acidity, pH 6.8 to 6.2, by addition of food (wheat) when necessary. Closer control was found to be unnecessary.

The saline solutions in which the *Paramecia* were heated were (1) saline as used for culture and referred to hereafter as balanced saline;<sup>3</sup> (2) the same but with the KCl omitted and CaCl<sub>2</sub> added in equimolar concentration; (3) the same but with the CaCl<sub>2</sub> omitted and KCl added in equimolar concentration; (4) the same but with KCl and CaCl<sub>2</sub> omitted and NaCl added in equimolar concentration. All of these were used at hydrogen-ion concentrations from pH 5.8 or 6.0 to 8.4 or 8.6, as the continued resistance of the organisms required. The pH of all solutions was controlled as follows: The solution was adjusted to a point slightly alkaline of the required value by omitting a portion of the NaCl and substituting NaHCO<sub>3</sub>, the substitution being made so that the Na concentration was not changed. The exact pH wanted was then reached by addition of dilute HCl with aeration to remove CO<sub>2</sub> until the solution was stable at the requisite pH over a period of at least two hours. The error due to dilution with HCl was deemed negligible as it never exceeded 0.2 per cent by volume. The pH measurements were made with a LaMotte colorimetric set, and since with these slightly buffered solutions the indicator might introduce error, two indicators at least were used over the range. The indicators used were methyl red, brom thymol purple, thymol blue, phenol red, and cresol red. These allow simultaneous colorimetric measurements with two different indicators over the range used, with the exception of pH 8.6 where cresol red was used alone.

The experimental procedure was as follows: 10 cubic centimeters of culture fluid with suspended *Paramecia* was taken from a vigorous culture, the *Paramecia* thus obtained were washed three times with balanced saline at pH 6.8 by low speed centrifugation, and then left for 24 hours. From these *Paramecia*, lots of 25 each were moved with a paraffined capillary pipette and each lot was placed separately in a paraffined Petri dish. Then by means of a pipette superfluous saline was removed until the drop containing the *Paramecia* was reduced to approximately 0.02 cubic centimeter as checked by comparison with

<sup>2</sup> No conjugation was observed during the course of the investigation.

<sup>3</sup> The term "balanced" is not used to imply a physiologically determined optimum condition. The solution used is simply one that was found empirically to be suitable for culture purposes.

measured drops of saline placed in the dish for reference. The dish was kept covered, except when under manipulation, to prevent evaporation or accidental contamination.

The lots of *Paramecia* were then transferred separately at timed intervals to paraffined test tubes each of which contained 5 cubic centimeters of the saline solution used. These tubes had all been previously brought to 40° C. in a water bath and were maintained at that temperature throughout the experiment. When exposure to heat had been completed, all tubes were removed simultaneously from the bath and were cooled in a second bath at 20° to 22° C. for 30 minutes. At the end of this time the tubes were emptied separately into small round-bottomed glass dishes and the surviving *Paramecia* in each lot were counted. Each individual as counted was removed from the dish with a pipette. A test of the accuracy of count was made by running through the procedure with the baths at room temperature. Ten such runs gave a maximum error, occurring once in the 10 runs, of 2 *Paramecia* or 8 per cent on individual counts.<sup>4</sup>

EFFECT OF CHANGES IN HYDROGEN-ION CONCENTRATION ON THE RESISTANCE OF PARAMECIA TO A TEMPERATURE OF 40° C. WHEN EXPOSURE IS MADE (a) IN BALANCED SALINE; (b) IN SALINE WITH POTASSIUM EXCESS; (c) IN SALINE WITH CALCIUM EXCESS; (d) IN SALINE WITH SODIUM EXCESS

(a) *In balanced saline*.—*Paramecia* were exposed to 40° C. in balanced saline at pH 6.0 to 8.6 in 0.2 unit steps, for 2, 4, 8, 12, and 16 minutes. Five counts were obtained of the number of protozoa surviving at the end of each time interval in each hydrogen-ion concentration used. These counts were averaged and the percentage of survivors was plotted as a function of time. This gave a series of curves which showed the rate of death at each pH. From this series of curves the time taken to kill 50 per cent at each pH was obtained by interpolation and plotted as a function of pH. Inasmuch as the making of this series of tests took several days, controls were established by obtaining, after all the counts had been completed for a given pH, a single count at pH 6.6 (the first pH value used) at each time interval used, for comparison with the previous counts. Similarly, when other solutions were used such control counts were always made using the balanced solution at pH 6.4, 6.6, or 7.0. This latitude in pH value was allowed, because owing to the difficulty of making the solutions it seemed impracticable to run all controls at exactly the same pH. Further, once the curve for the balanced solution was established, variation in the pH used for controls served to establish the curve in the balanced solution more firmly by providing additional check points.

The number of cells coagulated, i. e., in which the protoplasm was opaque and no rupture of the cell had occurred, was noted in all

<sup>4</sup> A binocular dissecting microscope was used for making the counts and other observations.

counts. The figures obtained were averaged for each pH step and plotted as percentages of total deaths for each pH. Also a qualitative observation was made for each pH of the condition of the cell as to swelling. This observation was based on simultaneous ocular comparison of surviving *Paramecia* with normal individuals. The curves

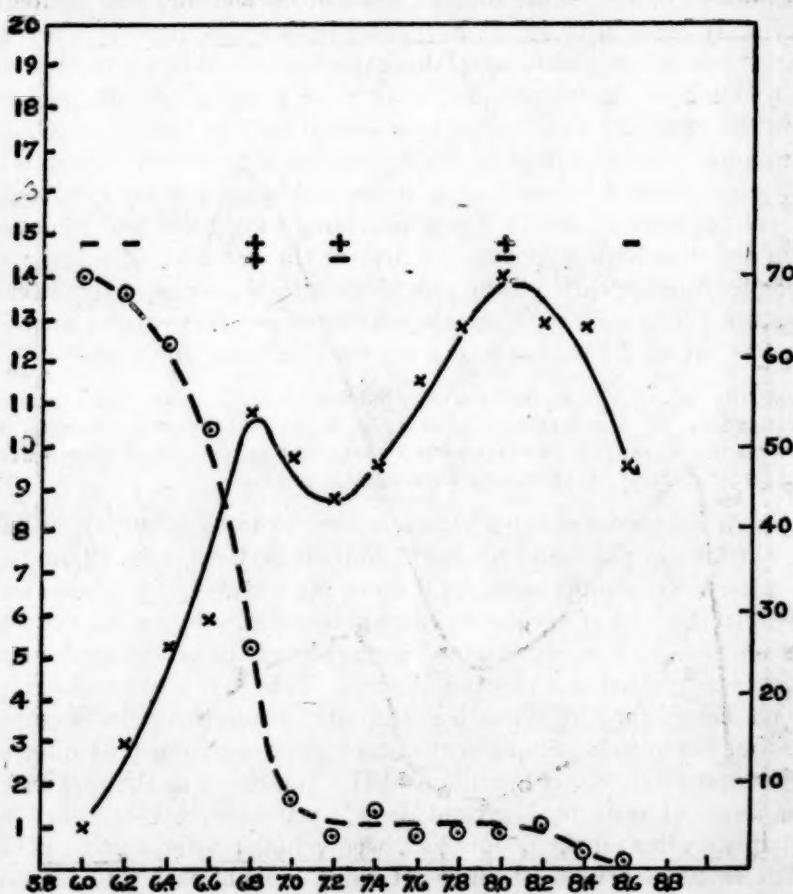


FIGURE 1.—Graph showing the variations in resistance to heat and swelling, and in the per cent of deaths due to coagulation of the cell, in *Paramecia* exposed to 40° C. in balanced saline at different hydrogen-ion concentrations. Abcissas represent pH; ordinate scale on left, time in minutes required to kill 50 per cent; scale on right per cent of deaths in which cells were unruptured and coagulated; continuous line, resistance; broken line, per cent of deaths by coagulation. Swelling indicated as follows: — none or shrinkage; ± slight to none; + marked; + great

obtained are presented in Figure 1. From the curves it will be noted that the time of resistance rises from 1 minute at pH 6.0 to a maximum of 10.6 minutes at pH 6.8, drops to a minimum of 8.8 minutes at pH 7.2, rises again to a maximum of 14 minutes at pH 8.0, and then declines to 9.5 minutes at pH 8.6. The percentage of cells coagulated is 70 per cent at pH 6.0. It then drops gradually to about 5 per cent

at pH 7.2, remains relatively constant to pH 8.2, and then drops gradually to 2 per cent at pH 8.6.

Swelling apparently is negligible or absent at pH 6.0, but great at pH 6.8, and apparently less at pH 7.0 and on into the alkaline range. In the extreme alkaline range, from approximately pH 8.0 on, few fragments of cells were found. The membrane and cell contents

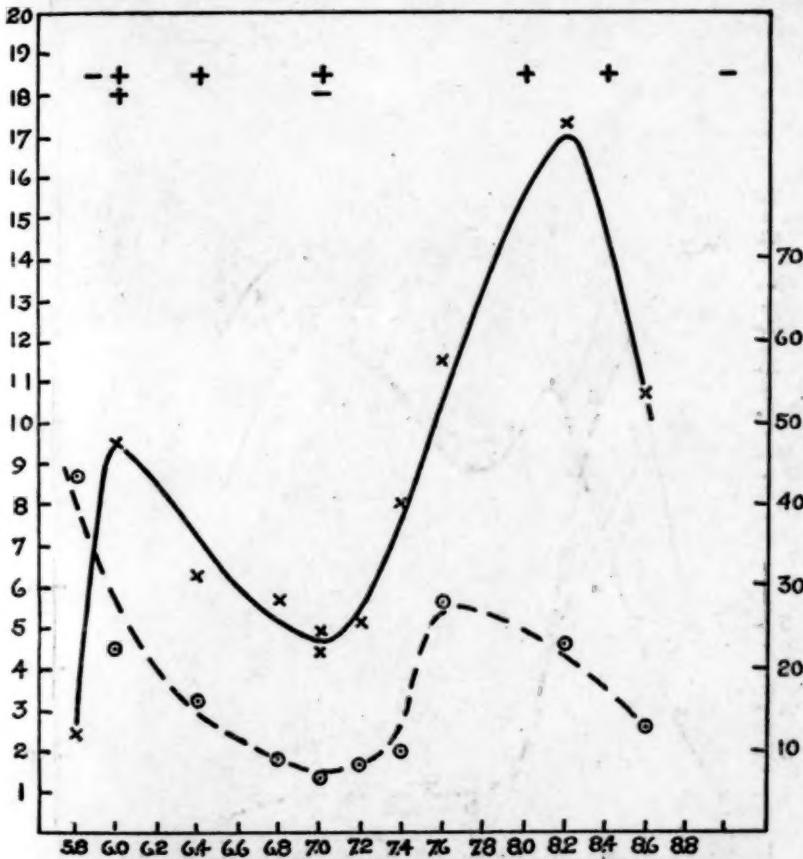


FIGURE 2.—Graph showing the variation in resistance to heat and swelling and in the per cent of deaths due to coagulation in *Paramecia* exposed to 40° C. in saline with potassium excess at different hydrogen-ion concentrations. Abscissas, pH; ordinate scale on the left, time in minutes to kill 50 per cent; scale on right, per cent of deaths in which cells were unruptured and coagulated; continuous line, resistance; broken line, per cent of deaths by coagulation. Swelling indicated as follows: — none or shrinkage; ± slight to none; + marked; + great

rapidly dissolved and the degree of swelling as noted in surviving cells was, if anything, less than that at neutrality.

(b) *In saline with potassium excess.*—In this experiment the procedure was as previously outlined, except that exposure was made in a saline solution which contained in place of the  $\text{CaCl}_2$  of the balanced saline an equimolar addition of  $\text{KCl}$ . The curves for variation of resistance and coagulation are presented in Figure 2.

From these it will be seen that the time of resistance increases from 2.4 minutes at pH 5.8 to 9.5 minutes at pH 6.0, declines gradually to about 4.8 minutes at pH 7.0, rises sharply to a maximum of 17.3 minutes at pH 8.2, then declines to 10.7 minutes at pH 8.6. As compared with the results of the previous experiment the maximum on the acid side is lower and occurs at a lower pH. The neutral mini-

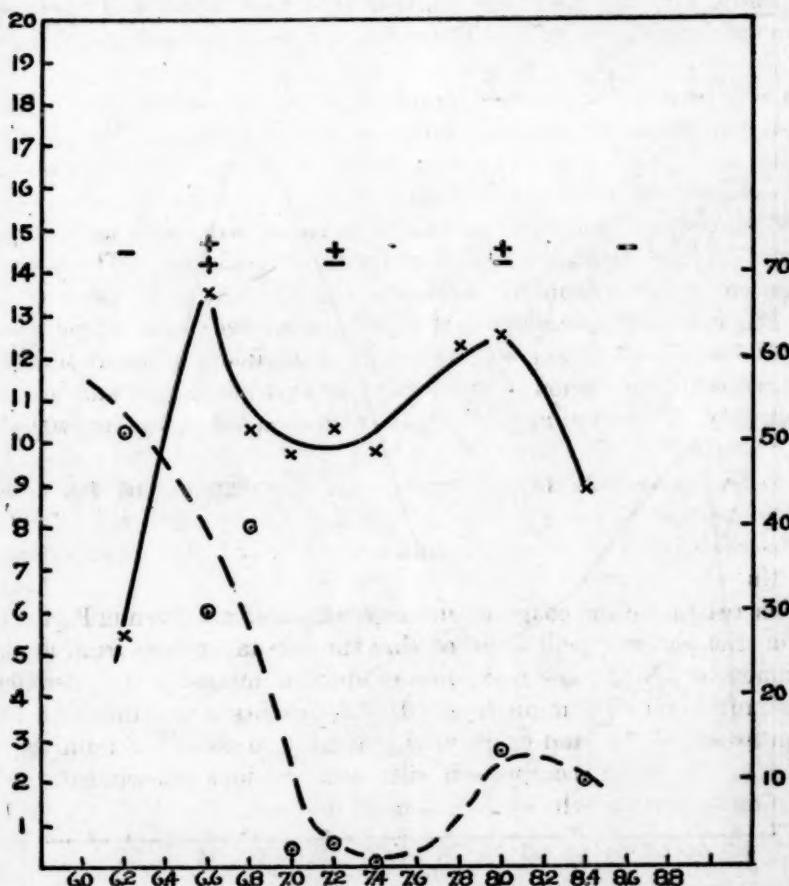


FIGURE 3.—Graph showing the variation in resistance to heat and swelling and in the per cent of deaths due to coagulation in *Paramecia* exposed to 40° C. in saline with calcium excess, at different hydrogen-ion concentrations. Abscissas, pH; ordinate scale on left, time in minutes to kill 50 per cent; scale on right, per cent of deaths in which cells were unruptured and coagulated; continuous line, resistance; broken line, per cent of deaths by coagulation. Swelling is indicated as follows: — none or shrinkage; ± none to slight; + marked; † great.

mum is lower and possibly shifted slightly toward the acid side. The alkaline maximum is much increased and is shifted slightly to the alkaline side.

The curve for the percentage of deaths showing coagulation starts at 45 per cent at pH 5.8, drops to about 8 per cent at pH 7.2, rises to about 28 per cent at pH 7.8, and then declines to 12 per cent at pH

8.6. The swelling was not noticeable at pH 5.8, very marked at pH 6.0, less at pH 6.8 and 7.0, more marked at pH 7.6, and negligible at pH 8.6. A comparison with the preceding experiment could not be made as it was impracticable to place the data on a quantitative basis.

(c) *In saline with calcium excess.*—This experiment was carried out as before, but the KCl was omitted from the saline and replaced by molar equivalent CaCl<sub>2</sub>. The curves for resistance and coagulation are presented in Figure 3.

It will be noted from these graphs that the resistance curve again shows two maxima; this time, however, the maxima occur at pH 6.6 on the acid side and at pH 8.0 on the alkaline side. The acid maximum time is the greatest, reaching 13.5 minutes, while the alkaline is 12.5 minutes. The neutral minimum is rather wider and apparently at pH 7.2, the resistance time here being 10.0 minutes. The coagulation curve drops from 52 per cent at pH 6.2 to about 2 per cent at pH 7.0, rises to 13 per cent at pH 8.0, and then declines to 10 per cent at pH 8.4. The swelling was, as before, negligible in extreme acidity, noticeable in the region of the acid resistance maximum and less at neutrality. The alkaline side, however, showed definitely less swelling than at pH 7.0.

(d) *In saline with sodium excess.*—In this experiment the same procedure was followed but both KCl and CaCl<sub>2</sub> were omitted and sufficient NaCl was added to replace the Ca and K concentrations by Na.

The resistance and coagulation curves obtained are given in Figure 4. From this figure it will be noted that the resistance rises from about 1 minute at pH 6.2 to a maximum of about 4 minutes at 6.6, declines to a minimum of 2 minutes at pH 7.2, reaches a maximum of 5.2 minutes at pH 7.6, and drops very gradually to about 4.5 minutes at pH 8.4. Thus, in comparison with the previous experiments, the resistance over the whole range is much lowered.

The percentage of coagulation drops from 35 per cent at pH 6.2 to 0 per cent at pH 7.4, and then remains at about 1 per cent or less for the remainder of the alkaline range covered. The swelling noted was none at extreme acidity and markedly less throughout than in the previous experiments. It appeared also that the character of the coagulation was somewhat different. It was not so definite and the cells appeared milky rather than densely white.

#### DISCUSSION

From the foregoing it appears that when *Paramecium* is exposed to a temperature of 40° C its resistance is affected by the hydrogen-ion concentration, and also by the salt balance of the surrounding medium.

If the region between pH 6.6 and pH 7.8 approximating the pH range of mammalian tissue is considered, it is apparent that with reference to the balanced solution used, an excess of potassium tends to decrease and an excess of calcium to increase resistance. It is also to be noted that in alkaline conditions the resistance is in general greater than in acid.

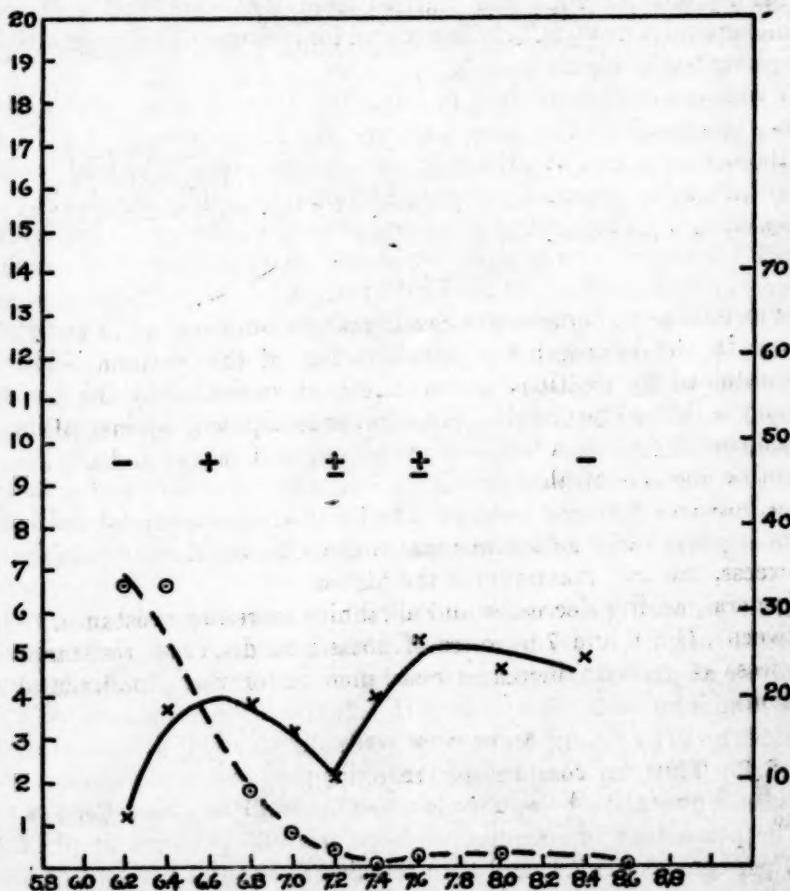


FIGURE 4.—Graph showing the variation in resistance to heat and swelling, and in the per cent of deaths due to coagulation in *Paramecium* exposed to 40° C. in saline with sodium excess, at different hydrogen-ion concentrations. Abcissas, pH; ordinate scale on left, time in minutes to kill 50 per cent; scale on right, per cent of deaths in which cells were unruptured and coagulated; continuous line, resistance; broken line, per cent of deaths by coagulation. Swelling is indicated as follows: — none or shrinkage; ± none to slight; + marked; + great

It is of interest to note that Beebe (1904) and Rohdenberg and Krehbiel (1922) find that in tumors there is in general a tendency toward relative excess of potassium, and also to note that there is reason to expect from the relatively high lactic acid production of such tissue that the fluids in actual contact with the cells will have a relatively low pH.

It would therefore seem probable (with the necessary reservations when results obtained for one type of cell are applied to another) that the low resistance to heat of tumor tissue as reported by Rohdenberg and Prime, Lambert and others (*loc. cit.*) is a correlate of the altered salt balance and acid base equilibrium that prevails in their immediate environment. Further research along this line might make possible a rationale of heat treatment of tumors.

From the curves presented for coagulation it will be noted that the type of death varies with the pH. Coagulative changes appear to be associated with death when the cell is in acid media, while swelling resulting in rupture of the cell membrane or dissolution of the cell with no swelling result when neutral or alkaline media, respectively, are used. It is proposed to deal with the implications of these differences in a separate paper.

#### SUMMARY

The resistance of *Paramecium caudatum* to a temperature of 40° C. varies with the hydrogen-ion concentration of the medium. The curve obtained by plotting the resistance, as measured by the time necessary to kill 50 per cent of the organisms exposed, against pH is bimodal, having maxima in the alkaline and acid ranges and a minimum at or about neutrality.

In a balanced solution, and in solutions containing an excess of sodium or potassium, the alkaline maximum is the higher. If calcium is in excess, the acid maximum is the higher.

In general, acidity decreases and alkalinity increases resistance.

Between pH 6.6 and 7.6 excess of potassium decreases resistance and excess of calcium increases resistance under the experimental conditions.

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### DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for December, 1929, and for the Years 1911  
and 1919 to 1929

The accompanying tables are taken from the Statistical Bulletin for January, 1930, issued by the Metropolitan Life Insurance Co. They present the mortality experience of the industrial insurance department of the company for the principal causes of death for December, 1929, and a comparison of the rates for the years 1911 and

1919 to 1929, inclusive. The rates for 1929 are based on a strength of nearly 19,000,000 insured persons in the United States and Canada, comprising about one-seventh of the total and about one-third of the urban population of the two countries. While this is a more or less selected group and is largely urban, the death rate serves as an index of conditions in the general population. In recent years the general death rates in this group of persons have been consistently about 72 per cent of the rates for the registration area of the United States.

## DECEMBER, 1929

The December death rate for these insured persons, 8.7 per 1,000, is stated to be the lowest recorded rate for this month. It is much lower than the rate for the corresponding month of the preceding year, 9.3 per 1,000, which reflected the rise due to the influenza epidemic. In addition to influenza and pneumonia, the following named causes of death showed improvement as compared with December of 1928: Whooping cough, diphtheria, tuberculosis, diabetes, respiratory diseases other than pneumonia, diarrhea and enteritis, and chronic nephritis. The death rate for typhoid fever was higher for December, 1929, than for the same month of 1928, as was also that for automobile fatalities.

*Death rates (annual basis) per 100,000 for principal causes of death, December, 1929*

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	Rate per 100,000 lives exposed <sup>1</sup>				
	Decem- ber, 1929 <sup>2</sup>	Novem- ber, 1929 <sup>2</sup>	Decem- ber, 1928 <sup>2</sup>	Year	
				1929 <sup>2</sup>	1928 <sup>2</sup>
Total, all causes.....	809.6	790.7	926.0	916.2	916.6
Typhoid fever.....	2.1	2.4	1.7	2.3	2.7
Measles.....	1.8	1.4	1.4	2.9	5.2
Scarlet fever.....	3.3	1.8	2.4	2.6	2.7
Whooping cough.....	3.3	3.7	4.8	5.6	5.7
Diphtheria.....	10.4	11.8	11.3	8.6	9.7
Influenza.....	20.5	13.1	48.8	41.1	24.8
Tuberculosis (all forms).....	74.1	73.2	75.8	85.2	90.1
Tuberculosis of respiratory system.....	66.2	65.4	68.3	75.2	78.8
Cancer.....	75.1	73.8	74.0	76.0	75.7
Diabetes mellitus.....	16.7	16.6	18.0	18.0	17.6
Cerebral hemorrhage.....	57.7	50.6	57.3	56.9	56.7
Organic diseases of heart.....	144.5	126.1	144.3	144.0	142.2
Pneumonia (all forms).....	87.9	64.1	103.9	86.9	89.3
Other respiratory diseases.....	10.8	9.2	19.5	11.4	12.4
Diarrhea and enteritis.....	12.7	15.0	14.0	20.4	24.0
Bright's disease (chronic nephritis).....	65.6	63.1	68.6	68.1	70.5
Puerperal state.....	11.4	11.1	9.0	13.3	13.9
Suicides.....	7.5	7.7	7.1	8.4	8.3
Homicides.....	6.9	5.3	6.9	6.4	6.7
Other external causes (excluding suicides and homicides).....	65.6	61.7	59.4	63.9	62.6
Traumatism by automobiles.....	21.3	23.9	20.5	20.6	18.4
All other causes.....	191.8	179.8	196.8	194.0	195.7

<sup>1</sup> All figures in this table include infants insured under 1 year of age.<sup>2</sup> All 1929 death rates subject to slight correction, as they are based on provisional estimate of lives exposed to risk.<sup>3</sup> 1928 death rate is final figure.

**YEAR 1929 AND COMPARISON WITH 1911 AND YEARS 1919-1928**

The general death rate in this group of persons for the year 1929 was 8.7 per 1,000, practically the same as that for 1928 and for the month of December of 1929. This is approximately one-third less than the rate for 1911, namely, 12.5 per 1,000.

The year 1929 brought new low records for some diseases and conditions which are important from the standpoint of health work. The tuberculosis death rate was 85.6 per 100,000, the lowest rate recorded to date for this group. Typhoid fever, the scourge of urban populations 30 years ago, also registered a new low death rate, 2.3 per 100,000, as did the rate for puerperal causes. The mortality rates for measles and diphtheria also show declines to new minimum figures. The falling death rate for diarrhea and enteritis reflects improved standards of hygiene—better protection of food and water supplies and more intelligent care in the feeding of children. The rate for 1929, viz, 7.8 per 100,000, was approximately only one-fourth of the figure for 1911.

Among the unfavorable items reflecting health conditions for 1929 are influenza, which registered the highest death rate for any year since 1920, organic heart disease, cancer, and diabetes. Automobile fatalities also increased.

The influenza mortality brought the combined death rate for influenza and pneumonia higher than it has been since 1920, although the pneumonia rate alone was only a little higher than the average for the six preceding years; in fact only four years (1927, 1925, 1924, and 1921) registered a lower pneumonia death rate than that for 1929.

The death rate for heart disease was 146.1 per 100,000, as compared with 144.4 in 1928, the previous maximum rate for this group of persons. The rate for 1929 was 3 per cent higher than in 1911.

The death rate for cancer continued its slow but persistent increase to a new high point, 77.3 per 100,000, as compared with 77.0 in 1928. The 1929 rate for cancer was 13.7 per cent in excess of that for 1911.

Diabetes also registered a new high death rate in 1929, the rate being 18.3 per 100,000 as compared with 17.9 in 1928, and with 13.3 for 1911—an increase over the latter rate of nearly 38 per cent.

The rate for automobile fatalities was 20.9 per 100,000, the highest rate yet recorded for these persons, a rise of 12 per cent in one year and of 809 per cent since 1911. Approximately one-third of all accidental deaths among these 19,000,000 persons was in connection with the use of automobiles.

Acute and chronic alcoholism (not including deaths from methanol and denatured alcohol) caused 641 deaths in this group in 1929, as compared with 599 deaths in 1928. It is stated that among these

persons the alcoholism death rate during the past eight years has been six times as high in the United States as in Canada.

Deaths from cirrhosis of the liver numbered 1,208 in 1929, as compared with 1,217 in 1928. The rate, however, declined from 6.7 to 6.5 per 100,000.

*Death rates for principal causes per 100,000 lives exposed, 1929 as compared with 1911 and years 1919 to 1928, ages 1 and over*

Cause of death	1929 <sup>1</sup>	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1911
All causes of death	874.3	869.3	842.2	885.7	846.3	848.0	867.1	882.9	870.6	889.4	1,063.0	1,253.0
Typhoid fever	2.3	2.7	4.7	4.2	4.6	4.4	5.2	5.7	6.7	6.7	7.3	22.8
Communicable diseases of childhood												
Measles	16.3	19.0	19.7	25.9	19.7	26.2	33.1	29.8	37.9	43.1	31.5	58.9
Scarlet fever	2.4	4.2	3.4	8.0	2.5	5.7	8.4	4.3	3.2	8.5	3.5	11.4
Whooping cough	2.6	2.6	3.0	3.4	3.4	4.3	4.4	4.9	7.0	6.0	3.9	13.1
Diphtheria	2.9	2.7	3.1	5.0	3.6	3.5	4.8	2.6	3.9	6.6	3.2	7.1
Influenza and pneumonia	8.5	9.5	10.2	9.5	10.2	12.7	15.5	18.0	23.8	22.1	20.9	27.3
Influenza	109.5	94.8	78.7	105.6	88.3	84.4	107.7	95.3	76.5	159.5	214.1	131.2
Pneumonia	36.9	22.0	15.7	27.4	19.4	14.2	30.1	21.7	8.7	53.5	96.9	15.9
Poliomyelitis	72.6	72.8	63.0	78.2	69.0	70.2	77.6	73.7	67.8	106.1	117.2	115.3
Tuberculosis, all forms	85.6	90.6	93.8	99.5	98.2	104.4	110.5	114.2	117.4	137.9	156.5	224.6
Tuberculosis of respiratory system												
Cancer, all forms	70.2	80.0	83.0	87.9	87.0	93.4	100.6	103.6	105.6	124.0	141.6	203.0
Diabetes mellitus	77.3	77.0	75.6	75.1	71.8	71.5	72.7	72.0	71.7	69.8	67.0	68.0
Alcoholism	18.3	17.9	17.1	17.0	15.5	15.1	16.2	17.2	15.5	14.1	13.4	13.3
Cerebral hemorrhage, apoplexy	3.4	3.3	3.5	3.7	3.0	2.9	3.0	2.1	.9	6	1.4	4.0
Diseases of heart	57.7	57.6	56.0	56.5	54.4	61.1	61.9	62.9	62.1	61.3	59.8	64.2
Diarrhea and enteritis	146.1	144.4	134.7	136.4	128.7	126.2	128.7	126.7	117.4	117.0	113.9	141.8
Chronic nephritis (Bright's disease)	7.8	8.7	9.1	10.5	12.3	11.3	11.1	10.8	14.2	15.8	16.9	28.0
Puerperal state, total	69.2	71.8	70.8	74.9	71.2	66.5	69.6	70.3	68.0	70.8	73.5	95.0
Puerperal septicemia	13.5	14.2	15.7	15.6	16.9	17.2	17.9	19.0	19.8	23.0	20.0	19.8
Puerperal albuminuria and convulsions	5.0	5.0	6.4	6.0	6.6	6.6	6.9	7.4	8.5	8.6	6.7	8.8
Accidents of pregnancy												
Total, external causes	3.1	3.1	3.2	3.6	3.8	4.3	4.2	4.7	4.9	5.0	4.8	4.7
Suicides	1.5	1.6	1.3	1.7	1.6	1.8	1.6	1.7	1.6	3.1	3.0	1.7
Homicides	6.5	6.8	7.4	7.2	7.4	7.2	7.3	6.3	6.7	5.8	6.9	7.2
Accidents, total	63.9	62.5	63.9	62.3	63.9	62.4	63.0	58.0	57.5	59.6	63.8	77.4
Accidental burns	4.8	5.3	5.3	6.1	6.1	6.4	6.3	6.1	6.6	8.1	8.1	8.8
Accidental drowning	6.4	7.1	6.8	6.3	6.5	7.3	6.7	7.3	8.2	6.7	8.6	10.2
Accidental traumatism by fall	8.9	8.0	8.5	7.0	8.1	7.7	8.4	7.3	7.1	7.3	8.0	13.2
Accidental traumatism by machines	1.6	1.2	1.4	1.4	1.3	1.3	1.7	1.6	1.0	1.7	1.6	1.8
Railroad accidents	3.8	3.9	4.1	4.2	4.0	4.0	4.0	4.1	3.9	5.2	5.7	9.5
Automobile accidents	20.9	18.7	18.7	17.0	16.8	15.9	15.4	13.6	12.2	11.1	10.7	2.3
All other accidents	17.4	18.3	19.1	19.4	21.2	19.7	19.5	18.0	18.5	19.5	21.2	31.6
War deaths	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	16.6	
Other diseases and conditions	187.7	188.3	181.0	183.6	183.4	180.9	181.7	185.1	190.5	197.8	193.5	283.5

<sup>1</sup> All 1929 death rates subject to slight correction, as they are based on a provisional estimate of lives exposed to risk.

<sup>2</sup> Death rate less than 0.05 per 100,000.

## RECENT STATE MORTALITY STATISTICS <sup>a</sup>

For the information of public health officials and others interested, mortality rates for the latest month for which records are available are given for various States in the following tables. These rates are computed from current and generally preliminary reports furnished by State departments of health. Because of (a) some lack of uniformity in the method of classifying deaths according to cause, (b) some delayed death certificates, and (c) various other reasons, these

<sup>a</sup> From the Office of Statistical Investigations, U. S. Public Health Service.

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preliminary rates can not be expected to agree in all instances with final rates published by the Bureau of the Census; the final figures are based on a complete review and retabulation of the individual death certificates from every State. The preliminary rates given in the following tables are intended to serve as a current index of mortality until final figures are issued by the Bureau of the Census.

For purposes of comparison, the mortality records for a few preceding years are given, the rates being those for the month corresponding to the latest month for which the 1929 rate is available. These comparative rates for preceding years are from the same source as the current reports. Although final figures are often available for these earlier years, the preliminary figures are retained as being more comparable with current preliminary rates.

#### *Monthly State mortality statistics*

All rates are on an annual basis, and, with the exception of mortality from all causes, infant mortality, and congenital malformations and diseases of early infancy, are per 100,000 population]

##### ALL CAUSES: ANNUAL RATE PER 1,000 POPULATION

	1929											Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925		
Alabama.....	11.2	11.9	11.8	11.1	11.0	10.8	11.0	10.9	13.2	13.4	13.3	11.6	13.5		
White.....	9.0	9.2	9.2	8.7	8.5	8.4	8.5	8.5	10.5	11.1	11.3	9.9	-----		
Colored.....	15.3	16.9	16.8	15.7	15.7	15.5	15.1	15.2	18.4	17.5	17.0	15.1	-----		
Arizona.....	16.1	17.6	17.9	13.2	11.3	11.8	11.6	13.7	14.9	20.0	-----	-----	-----		
California.....	15.2	13.8	14.2	13.1	12.8	12.4	13.1	14.3	-----	16.6	-----	-----	-----		
Connecticut.....	10.4	11.1	9.0	9.3	8.9	9.5	10.2	10.0	-----	10.2	9.4	10.4	11.6		
Florida.....	-----	-----	-----	-----	-----	-----	11.8	12.2	-----	-----	-----	-----	-----		
White.....	-----	-----	-----	-----	-----	-----	9.5	10.7	-----	-----	-----	-----	-----		
Colored.....	-----	-----	-----	-----	-----	-----	16.9	15.4	-----	-----	-----	-----	-----		
Georgia.....	9.6	9.1	11.3	10.3	10.0	10.4	10.5	9.9	12.1	-----	-----	-----	-----		
Hawaii Territory.....	14.6	14.5	12.7	12.1	9.7	10.8	10.3	11.1	10.7	12.6	11.9	-----	-----		
Indiana.....	12.4	12.2	11.0	10.5	10.5	10.9	10.9	11.0	-----	11.2	11.4	11.5	11.6		
Iowa.....	10.7	10.4	-----	9.7	8.6	9.7	9.5	13.4	10.8	14.4	-----	-----	-----		
Kansas.....	11.0	9.8	9.6	9.2	9.7	8.7	9.0	10.2	10.8	10.8	-----	-----	-----		
Louisiana.....	11.5	11.2	11.6	11.1	10.8	11.1	11.8	12.4	-----	11.9	-----	-----	-----		
White.....	8.8	8.2	8.2	8.3	8.4	9.0	9.1	9.7	-----	9.4	-----	-----	-----		
Colored.....	16.5	16.7	16.9	16.0	15.1	15.1	16.8	17.3	-----	16.6	-----	-----	-----		
Maryland.....	-----	-----	11.7	11.9	11.1	12.2	12.5	14.0	-----	-----	-----	-----	-----		
White.....	-----	-----	10.4	10.8	9.9	11.0	11.6	12.6	-----	-----	-----	-----	-----		
Colored.....	-----	-----	18.4	17.5	16.8	18.2	17.3	21.7	-----	-----	-----	-----	-----		
Michigan.....	12.7	13.2	11.7	10.8	10.4	11.2	10.9	10.7	11.9	16.2	-----	-----	-----		
Minnesota.....	0.3	9.2	8.6	8.3	8.0	7.9	8.1	8.6	9.7	12.5	-----	-----	-----		
Mississippi.....	11.8	11.1	12.6	11.7	10.7	10.0	11.9	-----	10.7	-----	-----	-----	-----		
White.....	8.8	8.4	9.0	8.6	8.4	8.0	9.8	-----	8.1	-----	-----	-----	-----		
Colored.....	14.6	13.7	15.9	14.5	12.7	11.7	13.8	-----	13.2	-----	-----	-----	-----		
Montana.....	-----	-----	-----	-----	9.0	-----	-----	-----	-----	8.0	-----	-----	-----		
Nebraska.....	0.7	9.6	8.4	8.2	7.7	8.4	-----	-----	-----	-----	-----	-----	-----		
New Jersey.....	12.1	11.3	10.5	10.4	9.0	10.3	10.8	11.2	12.7	13.2	11.5	13.1	12.3		
New York <sup>1</sup> .....	13.5	13.0	16.0	11.0	11.3	11.4	12.2	12.2	-----	12.4	12.4	12.6	14.5		
North Carolina.....	11.7	11.9	-----	-----	-----	-----	-----	10.7	17.5	-----	-----	-----	-----		
Pennsylvania.....	11.7	11.2	9.8	9.6	9.2	10.0	10.6	10.7	-----	11.5	11.5	11.7	12.0		
South Dakota.....	8.0	9.0	7.1	6.8	8.3	7.3	7.2	6.3	10.1	14.1	-----	-----	-----		
Tennessee.....	11.3	10.7	10.9	11.9	10.0	10.8	11.0	11.4	14.2	16.1	13.6	12.7	-----		
White.....	9.6	9.1	9.3	10.1	9.4	9.2	9.4	9.9	12.9	-----	-----	-----	-----		
Colored.....	19.8	18.2	18.9	20.9	18.2	18.4	18.4	18.7	20.5	-----	-----	-----	-----		
Virginia.....	10.3	9.8	9.7	10.2	8.9	9.0	9.6	10.2	12.1	13.1	-----	-----	-----		
White.....	8.8	7.8	8.0	8.8	7.4	7.4	8.3	9.0	10.2	11.5	-----	-----	-----		
Colored.....	14.4	15.1	14.4	14.0	13.0	13.2	12.9	13.4	17.0	17.3	-----	-----	-----		
Wisconsin.....	11.1	10.6	10.0	-----	8.9	9.2	9.4	9.4	11.0	-----	-----	-----	-----		

<sup>1</sup> Exclusive of New York City.

## Monthly State mortality statistics—Continued

INFANT MORTALITY, PER 1,000 LIVE BIRTHS

	1929										Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925	
	Alabama.....	69	78	73	70	60	61	67	62	61	72	75	53	—
White.....	62	66	69	67	52	54	59	51	48	60	65	45	—	
Colored.....	80	99	81	75	75	75	83	84	84	95	92	68	—	
Arizona.....	115	139	185	112	129	142	110	95	97	148	—	—	—	
California.....	69	65	63	62	56	56	56	58	58	69	—	—	—	
Connecticut.....	61	79	50	44	53	74	72	71	—	43	63	60	73	
Florida.....	—	—	—	—	—	—	—	65	58	—	—	—	—	
White.....	—	—	—	—	—	—	—	44	49	—	—	—	—	
Colored.....	—	—	—	—	—	—	—	105	76	—	—	—	—	
Georgia.....	—	—	—	—	—	—	—	63	73	68	78	—	—	
Hawaii Territory.....	117	109	108	89	158	81	83	90	94	113	—	—	—	
Indiana.....	60	63	48	52	64	74	62	55	66	81	61	73	70	
Iowa.....	61	48	—	44	43	40	45	49	49	44	—	—	—	
Kansas.....	69	53	49	47	49	47	46	49	—	56	—	—	—	
Louisiana.....	86	91	95	69	64	62	71	68	—	68	—	—	—	
Maryland.....	—	—	—	70	82	78	80	66	70	—	—	—	—	
White.....	—	—	—	60	75	68	66	57	56	—	—	—	—	
Colored.....	—	—	—	105	113	111	134	99	120	—	—	—	—	
Michigan.....	67	69	57	53	51	68	65	53	59	86	—	—	—	
Minnesota.....	51	49	36	39	40	42	40	38	44	56	—	—	—	
Montana.....	—	—	—	—	—	—	—	55	—	50	—	—	—	
Nebraska.....	50	48	48	36	37	49	—	—	—	—	—	—	—	
New Jersey.....	70	59	43	46	56	59	59	54	—	—	—	—	—	
New York <sup>1</sup> .....	70	64	52	45	47	58	64	58	—	63	64	76	69	
Pennsylvania.....	69	65	51	49	56	74	68	60	—	65	64	72	74	
South Dakota.....	63	63	41	50	39	43	40	51	44	59	—	—	—	
Tennessee.....	61	86	63	53	71	63	70	73	70	—	—	—	—	
Virginia.....	61	—	67	75	61	65	62	65	68	72	—	—	—	
Wisconsin.....	89	60	51	50	43	56	54	50	56	72	—	—	—	

CONGENITAL MALFORMATIONS AND DISEASES OF EARLY INFANCY (159-163), PER 1,000 LIVE BIRTHS

Alabama.....	27	34	29	27	30	31	21	26	24	23	28	25	—
White.....	29	34	34	30	30	29	33	26	23	26	27	23	—
Colored.....	24	34	20	21	31	35	29	26	28	18	29	28	—
Arizona.....	30	35	35	34	32	23	26	46	66	37	—	—	—
California.....	33	32	30	27	26	30	31	31	31	31	—	—	—
Florida.....	—	—	—	—	—	—	29	29	29	—	—	—	—
White.....	—	—	—	—	—	—	25	27	27	—	—	—	—
Colored.....	—	—	—	—	—	—	38	34	34	—	—	—	—
Iowa.....	35	31	—	30	30	27	28	29	25	35	—	—	—
Kansas.....	39	33	36	31	30	30	29	30	—	34	—	—	—
Louisiana.....	31	32	34	28	30	28	29	30	—	25	—	—	—
Maryland.....	—	—	—	36	34	35	38	32	30	—	—	—	—
White.....	—	—	—	36	37	31	36	29	27	—	—	—	—
Colored.....	—	—	—	36	27	49	46	39	38	—	—	—	—
Michigan.....	35	38	33	36	33	33	36	40	35	39	—	—	—
Minnesota.....	33	32	26	28	29	30	29	24	28	—	21	—	—
Nebraska.....	31	29	33	22	26	35	—	—	—	29	—	—	—
New York <sup>1</sup> .....	38	41	35	45	35	33	38	37	—	39	39	44	39
Pennsylvania.....	34	35	32	30	29	32	33	30	—	34	35	—	—
South Dakota.....	32	29	21	35	16	26	31	31	22	28	—	—	—
Tennessee.....	20	26	28	29	25	25	26	27	23	—	—	—	—

## TYPHOID FEVER (1)

Alabama.....	5.7	5.5	11.4	12.4	17.4	11.3	6.9	8.0	3.2	6.0	8.9	9.0	15.3
Arizona.....	12.8	32.3	25.7	12.4	5.0	15.4	14.9	7.7	2.5	(?)	—	—	—
California.....	1.6	1.6	1.9	3.1	2.6	3.5	2.3	1.9	—	1.1	—	—	—
Connecticut.....	—	1.4	1.5	1.4	1.4	7	1.4	1.5	—	(?)	(?)	1.6	2.4
Florida.....	5.3	7.4	12.2	20.2	19.9	20.9	14.3	8.4	9.9	—	—	—	—
Georgia.....	3.5	3.4	3.5	6.6	—	6.8	3.3	3.4	—	—	—	—	—
Hawaii Territory.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Illinois.....	.9	.5	1.6	2.2	1.9	2.5	2.2	—	—	1.0	2.1	1.6	2.2
Indiana.....	3.4	1.5	2.3	7.0	5.6	5.0	5.6	6.1	—	3.0	3.0	3.7	5.3
Iowa.....	2.6	1.0	—	9.7	3.4	2.5	2.4	7.3	5.3	—	3.4	—	—
Kansas.....	1.3	1.3	5.3	3.2	7.1	2.0	3.2	5.3	—	—	2.0	—	—
Louisiana.....	11.2	14.5	10.0	17.5	16.9	18.1	13.9	13.7	—	12.5	—	—	—
Maryland.....	—	—	—	5.1	8.0	7.5	5.8	5.3	2.9	—	—	—	—

<sup>1</sup> Exclusive of New York City.<sup>1</sup> No deaths.

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## Monthly State mortality statistics—Continued

## TYPHOID FEVER (1)—continued

	1920										Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1923	1927	1926	1925	
Michigan	1.9	2.1	1.9	1.5	2.8	3.5	2.8	1.9	0.5	1.3	—	—	—	—
Minnesota	.5	.4	1.3	2.6	1.3	1.8	.4	.9	(?)	.4	—	—	—	—
Mississippi	4.1	7.2	15.6	10.7	10.1	15.6	6.6	—	—	12.5	—	—	—	—
Montana	—	—	—	—	—	17.7	—	—	—	—	3.5	—	—	—
Nebraska	0	2.5	.9	1.7	2.5	5.2	—	—	—	—	—	—	—	—
New Jersey	.3	1.9	.3	1.9	1.8	2.2	2.8	1.9	1.8	—	3.1	2.0	4.3	3.5
New York <sup>1</sup>	.6	.6	2.1	2.3	2.1	3.2	2.5	2.4	—	—	2.1	3.4	4.9	—
North Carolina	2.1	3.2	—	—	—	—	—	—	4.0	—	—	—	—	—
Pennsylvania	.4	1.8	2.3	2.5	2.5	3.3	2.3	2.5	—	—	15.0	21.8	—	—
South Carolina	3.9	10.1	22.8	25.3	27.8	20.2	15.8	9.8	—	—	6.7	—	—	—
South Dakota	—	—	3.5	1.7	3.3	12.1	3.3	6.9	—	—	—	—	—	—
Tennessee	2.9	5.2	7.3	19.3	31.1	25.3	16.5	17.5	12.7	—	8.9	—	—	—
Virginia	.9	5.9	3.8	7.8	5.9	4.3	7.3	3.8	5.0	—	2.3	—	—	—
Wisconsin	1.2	.4	.8	.8	2.4	2.1	2.0	1.7	1.2	—	.8	—	—	—

## MEASLES (7)

	5.7	3.2	2.8	1.4	0.5	0.5	0.5	0.5	0.9	3.2	2.8	—	—	—
Alabama	—	.5	—	—	—	—	—	—	—	—	—	—	—	—
California	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Connecticut	7.4	6.5	3.7	.7	—	.7	(?)	(?)	—	.7	(?)	—	3.2	—
Florida	3.0	2.2	—	—	—	—	—	—	—	—	—	—	—	—
Georgia	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hawaii Territory	16.9	17.4	13.2	3.3	—	—	(?)	(?)	(?)	(?)	(?)	(?)	2.7	1.9
Illinois	10.1	9.7	6.9	2.1	.8	.2	.2	.5	.5	1.1	.5	2.7	—	—
Indiana	13.4	7.0	5.0	.4	.4	—	.7	(?)	.4	1.1	(?)	1.1	—	—
Iowa	2.5	1.9	—	.5	—	—	1.0	1.5	3.3	2.4	—	—	—	—
Kansas	5.3	7.1	7.3	1.3	1.3	1.3	.6	.7	—	—	—	—	—	—
Louisiana	4.4	4.2	0	2.4	0	4.4	.6	(?)	—	.6	—	—	—	—
Maryland	—	—	—	—	—	—	.7	1.5	—	—	—	—	—	—
Michigan	7.7	9.2	5.0	2.3	.3	—	.8	2.4	2.8	1.3	—	—	—	—
Minnesota	5.8	4.3	4.9	1.3	—	.9	.4	1.8	3.0	1.3	—	—	—	—
Mississippi	7.5	5.3	2.0	2.0	—	.7	0	—	—	2.6	—	—	—	—
Nebraska	0	4.2	7.8	1.7	1.7	1.7	—	—	—	(?)	—	—	—	—
New Jersey	2.2	.6	1.0	.3	.3	0	0	.3	.0	—	1.3	.7	1.8	3.5
New York <sup>1</sup>	3.6	4.1	2.1	1.0	1.4	.6	.6	.9	—	(?)	2.0	—	—	—
North Carolina	.8	.8	—	—	—	—	—	—	—	—	2.3	1.3	2.3	—
Pennsylvania	6.0	5.9	3.8	1.8	1.0	.7	.7	1.4	—	—	.7	4.6	—	—
South Carolina	—	.6	—	—	—	—	(?)	(?)	—	—	—	—	—	—
South Dakota	6.9	1.7	1.7	3.3	—	—	(?)	(?)	1.7	—	—	—	—	—
Tennessee	1.0	.5	.5	1.5	—	.5	.9	2.4	3.3	—	.5	—	—	—
Virginia	2.4	3.7	.9	.5	.9	—	1.4	—	.9	—	2.7	—	—	—
Wisconsin	7.0	6.0	4.5	2.0	—	.8	.8	1.2	2.8	—	.4	—	—	—

## SCARLET FEVER (8)

	0.9	1.4	0.9	0.5	0.5	0.5	2.4	3.2	—	1.4	1.9	1.9	—	—
Alabama	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arizona	20.5	2.5	(?)	(?)	(?)	(?)	(?)	(?)	—	—	—	—	—	—
California	3.7	4.4	2.9	.8	.5	.8	.8	1.3	—	1.9	—	—	—	—
Connecticut	.7	.7	.7	1.4	1.4	—	(?)	(?)	—	(?)	(?)	2.3	3.2	—
Florida	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Georgia	1.1	.7	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	6.2	5.3	3.7	3.8	.5	.8	3.0	—	5.7	4.5	2.7	1.4	3.2	—
Indiana	3.8	4.4	3.4	1.5	1.9	.8	1.1	1.9	3.3	2.6	1.9	3.4	—	—
Iowa	3.5	1.9	—	—	1.5	1.5	1.0	1.9	4.0	1.9	7.3	—	—	—
Kansas	6.0	2.6	2.7	—	—	—	1.3	6.6	—	5.3	—	—	—	—
Louisiana	.6	1.8	0	0	.6	0	1.2	1.2	—	3.1	—	—	—	—
Maryland	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Michigan	7.7	3.3	2.7	1.5	.5	.8	2.2	2.3	2.9	—	—	—	—	—
Minnesota	2.7	2.2	—	1.3	1.7	1.3	1.3	2.2	3.9	1.7	—	—	—	—
Montana	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nebraska	9.5	6.7	1.7	1.7	0	1.7	—	—	(?)	—	—	—	—	—
New Jersey	2.2	1.5	1.6	.3	—	—	.6	1.3	.9	—	2.8	1.3	.7	1.5
New York <sup>1</sup>	2.6	2.3	1.1	.8	1.4	1.1	1.0	1.1	—	1.6	—	—	—	—
North Carolina	2.9	2.4	—	—	—	—	—	—	—	—	—	—	—	—
Pennsylvania	3.3	3.1	2.1	1.4	1.0	1.2	1.1	1.5	—	—	2.0	3.2	2.8	—
South Carolina	1.3	.7	1.3	—	—	.7	(?)	3.9	—	.7	—	—	—	—
South Dakota	6.7	5.2	—	—	1.7	—	1.7	(?)	3.3	3.3	—	—	—	—
Tennessee	2.9	2.8	—	.9	.5	1.5	2.8	3.4	5.2	2.8	—	—	—	—
Virginia	.5	.5	.5	—	.5	.5	3.7	1.9	5.5	2.3	—	—	—	—
Wisconsin	5.4	.4	2.9	2.0	1.2	.8	2.4	.4	4.4	3.6	—	—	—	—

<sup>1</sup> Exclusive of New York City.<sup>2</sup> No deaths.

## Monthly State mortality statistics—Continued

## WHOOPING COUGH (9)

	1929											Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925		
Alabama	10.4	10.1	10.4	17.4	11.9	6.6	4.6	7.1	6.4	6.9	5.2	3.8	6.7		
Arizona	10.3	12.4	20.5	5.0	5.0	5.1	(?)	2.6	(?)	17.4					
California	8.3	9.0	10.2	7.8	6.7	3.5	2.8	2.7		6.4					
Connecticut	.7	2.2	3.0	2.2	2.2	1.5		2.7	2.2	2.3	5.4	3.9	8.7		
Florida								3.3	1.7						
Georgia	4.9	4.4	13.7	15.8	13.6	12.9	9.6	4.9	9.2						
Hawaii Territory	83.7	67.5	38.3	16.4	6.6	13.6	9.9			20.2	(?)				
Illinois	3.5	4.3	3.4	3.2	5.9	5.1	2.4			2.5	3.7	3.3	3.7	1.1	
Indiana	6.5	7.0	6.5	4.8	6.7	4.2	3.3	3.4	3.3	5.6	3.7	9.1			
Iowa	8.0	4.8		4.8	4.8	5.0		3.3		5.3					
Kansas	4.6	2.6	2.7	4.5	3.8	2.0	3.2	4.0							
Louisiana	7.5	6.0	6.9	11.5	4.8	4.4	3.0	5.6							
Maryland					7.3	11.7	5.3	6.6	7.5	8.7					
Michigan	7.2	8.2	5.6	3.3	7.4	6.6	4.6	2.1	2.8	10.0					
Minnesota	4.9	5.2	.9	4.8	3.0	4.0	2.6	1.8	3.0	6.5					
Mississippi	14.3	10.5	17.7	12.5	11.8	8.2	8.5			3.9					
Montana						4.4									
Nebraska	1.7	6.7	3.5	5.0	3.3	3.5					1.7				
New Jersey	5.7	4.0	2.2	2.8	4.9	4.1	4.0	1.6	2.5						
New York <sup>1</sup>	4.3	3.3	2.1	1.3	4.1	2.6	3.7	2.4		2.8	3.3	4.7	2.8		
North Carolina	7.5	9.6							8.0	4.4					
Pennsylvania	4.8	4.3	4.3	5.0	6.0	5.0	3.9	3.2		7.4	2.0	6.1			
South Carolina	13.1	17.1	22.8	18.3	15.8	9.1	8.8	9.1		2.6	10.6				
South Dakota	1.7	11.7	6.9	1.7	1.7	1.7	3.3	5.2	1.7						
Tennessee	6.3	7.5	6.3	13.7	10.0	7.8	5.6	6.3	6.6	5.2					
Virginia	6.1	8.2	9.9	12.8	16.9	9.4	7.3	5.2	11.4	6.4					
Wisconsin	6.6	5.6	4.9	4.4	4.0	2.1	1.6	3.3	3.6	3.2					

## DIPHTHERIA (10)

Alabama	2.8	2.3	1.4	2.8	7.3	16.6	23.3	17.5	13.3	17.9	19.7	22.7	12.9		
Arizona	7.7	(?)	2.6	(?)	5.1	9.9	20.5	14.9	12.4						
California	3.7	3.4	4.3	1.8	3.1	2.9	4.7	7.7		5.1					
Connecticut	3.7	4.3	3.7	2.9	1.4	4.4	7.2	4.4		6.0	1.5	1.6	8.0		
Florida							4.2	6.9							
Georgia	1.9	22.4	20.9	11.4	5.2	0.9	11.8	7.2	9.6						
Hawaii Territory	20.9	6.7	10.5	6.6	3.3	13.6	6.6	3.4	9.9	23.6	18.1				
Illinois	11.6	12.6	11.1	9.1	7.0	4.6	11.5		14.8	15.0	15.8	7.0	8.3		
Indiana	5.0	3.3	3.1	2.2	3.0	4.2	7.4	8.8	6.7	10.0	11.6	10.9			
Iowa	2.0	1.5		2.4	1.0	1.5	1.5	2.0	2.9	4.4					
Kansas	4.6	1.3	1.3	.6	.6	4.0	7.1	10.6			5.3				
Louisiana	2.5	5.4	3.1	3.6	6.0	5.0	11.5	14.4			14.4				
Maryland					1.5	5.1	1.5	3.6	6.8	3.6					
Michigan	10.3	11.3	13.0	9.8	6.9	8.5	13.3	9.3	14.6	12.8					
Minnesota	2.2	2.6	.9	2.6	1.7	1.8	1.3	4.0	4.3	5.2					
Mississippi	2.0		1.4	1.3	5.3	6.8	25.6				11.8				
Montana						8.9									
Nebraska	4.3	.8	5.2	.8	0	1.7				1.7					
New Jersey	10.5	10.5	9.9	8.9	5.5	6.7	10.8	15.3	16.9						
New York <sup>1</sup>	2.4	3.1	4.1	2.1	2.7	1.7	4.1	4.9		4.6	6.0	5.4	8.5		
North Carolina	4.1	1.6							31.3	26.4					
Pennsylvania	6.8	5.7	5.7	4.4	2.0	6.0	7.4	8.1		10.9	12.6	8.4			
South Carolina	2.0	4.4	3.3	1.9	10.1	10.4	16.4	13.1		22.2	19.8				
South Dakota	3.5	3.7				1.7			3.5	6.7	1.7				
Tennessee	2.9	3.3	2.9	1.4	6.1	8.8	20.7	20.4	16.5	18.8					
Virginia	1.9	1.4	1.4	2.7	3.2	10.4	16.9	13.2	16.0	12.4					
Wisconsin	.8	4.4	2.5	1.6	2.0	2.1	3.6	3.3	4.4	4.8					

<sup>1</sup> Exclusive of New York City.<sup>a</sup> No deaths.

March 7, 1930

## Monthly State mortality statistics—Continued

## INFLUENZA (11)

	1929											Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925		
Alabama.....	53.2	43.6	19.5	9.6	9.2	9.9	10.1	21.8	58.1	164.7	52.1	29.3	49.6		
White.....	47.1	32.2	18.1	8.4	8.3	10.1	9.8	16.7	50.5	152.8	43.7	24.4			
Colored.....	64.0	77.8	21.8	11.9	14.5	9.5	10.5	31.3	72.5	185.9	67.1	38.1			
Arizona.....	35.9	27.3	15.4	9.9	2.5	7.7	5.0	5.1	12.4	342.8					
California.....	23.5	13.4	7.5	5.2	4.1	5.9	9.3	15.0		127.1					
Connecticut.....	21.5	9.3	3.7	2.9	2.2	5.2	12.2	11.9		9.0	10.7	11.7	22.3		
Florida.....								16.7	23.3						
White.....								12.1	13.8						
Colored.....								26.7	44.1						
Georgia.....	74.5	22.4	20.9	11.4	5.2	9.1	19.5	22.4	44.5						
Hawaii Territory.....	38.3	27.0	20.9	19.7	13.2	6.8	3.3	6.8		3.3	30.4	14.5			
Illinois.....	20.5	15.0	7.1	3.5	3.3	4.8	8.4		18.0						
Indiana.....	36.4	21.1	13.0	11.1	8.5	10.3	18.9	18.8	41.2	267.7	23.9	36.2	30.5		
Iowa.....	28.1	28.6		0.7	5.3	8.0	9.2	18.6	33.9	256.5					
Kansas.....	46.4	29.5	21.2	12.2	11.5	9.9	10.9	17.9		29.2					
Louisiana.....	41.8	19.9	11.8	11.5	11.5	15.6	18.7	18.7		34.3					
White.....	30.8	14.9	9.6	8.4	9.3	10.6	12.1	12.1		31.8					
Colored.....	61.9	29.1	15.9	17.1	15.4	24.8	30.8	54.9		38.9					
Maryland.....					2.2	.7	5.3	8.7	11.3	14.6					
White.....					.9	.9	4.5	7.8	11.7	13.0					
Colored.....					9.1		9.4	13.7	9.4	22.8					
Michigan.....	24.1	21.8	10.2	6.7	5.1	6.4	11.8	9.8	13.6	157.2					
Minnesota.....	19.2	17.7	6.7	4.3	5.2	6.3	6.9	14.3	32.0	150.1					
Mississippi.....	42.8	27.0	17.7	11.2	7.9	6.8	13.1			9.2					
White.....	34.2	20.7	11.4	17.6	8.3	5.7	13.8			8.3					
Colored.....	50.8	32.7	23.4	15.8	7.5	7.8	12.6			10.1					
Montana.....							11.1								
Nebraska.....	32.8	26.8	23.3	5.9	5.0	12.1				9.5					
New Jersey.....	15.0	10.2	2.2	2.2	1.8	1.6	4.9	9.9	14.8	45.0	9.7	15.7	11.8		
New York <sup>1</sup> .....	23.1	13.0	3.3	2.9	2.0	3.2	8.1	8.8		13.7	11.1	10.6	10.8		
North Carolina.....	59.2	37.3							49.3	195.2					
Pennsylvania.....	26.9	20.6	10.0	6.7	4.9	9.7	16.7	19.4		21.0	19.5	19.8	21.6		
South Carolina.....	51.6	29.7	17.6	13.9	10.7	9.1	15.8	28.1		60.7	18.5				
South Dakota.....	41.5	38.5	15.6	10.0	11.7	8.6	11.7	13.8	36.8	224.1					
Tennessee.....	71.0	33.4	18.0	13.2	10.4	5.8	19.8	36.5	36.5	62.6	225.9	52.1			
White.....	61.6	27.8	14.7	11.9	9.7	5.9	16.5	32.9	52.2						
Colored.....	116.6	60.5	34.1	19.2	13.7	5.7	35.7	54.0	112.7						
Virginia.....	48.7	19.2	9.9	5.0	5.9	9.0	14.2	15.6	35.2	155.0					
White.....	36.6	11.4	5.9	1.9	7.0	3.9	10.1	11.1	29.1	149.8					
Colored.....	80.3	39.7	20.6	13.2	3.3	22.2	24.8	27.3	51.3	168.7					
Wisconsin.....	27.2	20.7	9.9	7.2	6.0	6.6	10.4	10.3	19.5	199.8					

## POIOMYELITIS (22)

Alabama.....	0.9		2.8	0.5	1.4	0.5	0.5	1.4	0.9	1.8					
Arizona.....	(?)	(?)	2.6	(?)	(?)	2.6	(?)	(?)	(?)	(?)					
California.....	.8	2.1	.8	.8	1.8	1.9	.8	1.1			1.6				
Connecticut.....			1.5	.7	.7			(?)	(?)		(?)	0.8	(?)	(?)	
Florida.....		3.4			3.3	3.4		3.4			(?)	(?)			
Hawaii Territory.....		.3	.2	.2		.3	.3			.2					
Illinois.....			.4			.4			.8	.7	.4				
Indiana.....				.5	1.0	1.5	1.5	1.3	1.5	1.5					
Iowa.....		.5			1.3	.6	.6	1.3	1.3						
Kansas.....								(?)	.6						
Louisiana.....	1.3	.6													
Maryland.....															
Michigan.....		.5	.5	.8	1.0	1.0	2.1	2.1	1.9	.5	.8				
Minnesota.....		.4	.9												
Mississippi.....	1.4		2.0	2.0											
Nebraska.....															
New Jersey.....		.3	.6	.6	.3	.3	1.5	(?)	.3						
New York <sup>1</sup> .....	.2	.4	.2	1.4	3.3	4.1	3.7	1.3		2.0	2.0	0.7	1.5		
North Carolina.....	1.2	.8													
Pennsylvania.....		.5	.7	.5	.7	.6	1.0	1.0							
South Carolina.....		1.3													
South Dakota.....		5.0													
Tennessee.....	.5	1.9	1.5	1.9	1.4	1.0	2.4	1.5	.5	4.2					
Virginia.....	.9														
Wisconsin.....		.8	1.2	.4											

<sup>1</sup> Exclusive of New York City.<sup>2</sup> No deaths.

## Monthly State mortality statistics—Continued

## LETHARGIC ENCEPHALITIS (23)

	1929										Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925	
Alabama	1.9	0.5	0.5	0.9	0.5	0.9	0.9	1.0	(?)					
Arizona	2.6	(?)	(?)	2.5	(?)	(?)	(?)	(?)	(?)	(?)				
California	2.4	1.6	1.3	1.3	1.3	1.6	1.8	1.9		1.6				
Connecticut		1.4	.7	.7	1.4	2.2	1.4	1.5		(?)				
Florida								.8	1.7					
Hawaii Territory					3.3	3.3	3.4		(?)					
Illinois	1.4	1.1	.7	.3	.2	.2	.2		1.0					
Indiana	1.5	.7	1.1	.7	.4	.8		1.1	2.2					
Iowa	1.0	1.5		.5		1.5	1.9	1.3	1.0	1.9				
Kansas	.7	2.6		1.3	.6		.6	.7						
Louisiana	0	1.8	0	0	0	0	1.8	(?)		.6				
Maryland						5.4	2.2	3.0	(?)					
Michigan	1.6	2.3	2.1	.5	.3	1.1	1.0	.8	1.0	1.0				
Minnesota	1.8	1.7	4.0	2.6	.9	.9	1.7	2.7	.4	3.0				
Mississippi	1.4	.7	0	0	1.3					1.3				
Montana						2.2								
Nebraska	0	0	1.7	0	.8	(?)				1.7				
New Jersey	1.0	1.2	1.9	.6	1.2	.3	2.5	1.3	.6					
New York <sup>1</sup>	.7	.8	2.4	.6	1.0	.2	.6	.4		(?)	.8			
North Carolina	.4	.4												
Pennsylvania	1.2	1.2	.6	1.0	.7	.7	.7	.6		1.5	1.0	0.9		
South Carolina	2.0	4.4	3.3		1.8	1.3	2.5	3.3		2.0	3.3			
South Dakota	1.7		1.7				5.0			1.7				
Tennessee	1.5		.5	1.9	.9	.6	.9	(?)		.5				
Virginia	2.4	.5	.9		1.4	.5	.5	.5	1.4					
Wisconsin	1.6	2.8	2.5	2.8	.4	1.2	1.2	.8	.8	.8				

## MENINGOCOCCUS MENINGITIS (24)

Alabama	0.5	0.9	0.5	0.5	0.5	0.5	1.0	0.9						
Arizona	23.1	17.4	18.0	9.9	2.5	12.8	2.5	25.7	19.9	9.9				
California	12.6	13.2	9.4	4.7	4.1	5.1	3.4	4.3		2.7				
Connecticut	.7	1.4			.7		(?)	3.0		(?)	(?)	0.8	(?)	
Florida							(?)	.9						
Hawaii Territory	58.3	50.6	27.9	19.7	3.3	6.8	16.4	(?)	6.6	6.7	(?)			
Illinois	2.8	3.2	2.6	2.1	2.1	.8	1.8		4.3	4.9	1.6	.5	1.1	
Indiana	1.9	3.0	1.9	1.1	.7	1.1				1.1	19.3			
Iowa	2.0	1.5		1.9	1.0			.5	2.7	(?)	1.5			
Kansas	2.7	3.2	2.0	3.2	1.3	2.0	1.3	2.0			2.0			
Louisiana	5.6	1.8	1.9	.6	1.8	0	3.6	1.9		(?)				
Maryland							.8	1.5	2.3	2.9				
Michigan	37.9	41.8	27.8	19.2	11.0	7.7	7.7	8.7	11.0	4.6				
Minnesota	2.2	1.7	1.3	3.5	1.7	.4	.4	1.3	.9	3.9				
Mississippi	.7			.7	1.3		1.3							
Montana						4.4				(?)				
Nebraska	2.6	1.7	1.7	.8	2.5	(?)								
New Jersey	2.2	4.6	2.2	2.2	1.2	1.9	2.2	4.8	4.3					
New York <sup>1</sup>	2.1	1.4	.6	1.0	2.1	.2	1.7	1.5		(?)	.4			
North Carolina	4.1	1.2									1.1	.5		
Pennsylvania	2.2	3.4	1.2	1.6	2.4	2.1	1.5	1.5						
South Carolina	3.9	2.5	2.0	1.9	.6	3.9	2.5	2.0			2.6	2.0		
South Dakota	1.7													
Tennessee	3.4	1.9	1.5	2.8	.5	1.5	1.4	2.4	3.6	2.8				
Virginia	1.4	2.7	.9	1.4		.9	2.4	1.8	.9					
Wisconsin	2.9	3.6	4.5	1.2	2.4	1.6	1.6	1.7	2.4	3.6				

## TUBERCULOSIS, ALL FORMS (31-37)

Alabama	91.8	88.1	81.3	86.5	78.7	82.8	76.4	74.2	89.7	73.0	84.0	85.2	101.2	
White	55.0	45.6	39.1	45.6	37.8	44.9	42.8	39.1	49.8	44.9	48.8	36.2		
Colored	159.4	167.4	159.4	163.5	155.6	154.0	139.8	140.3	164.8	125.3	147.4	172.2		
Arizona	449.2	481.9	395.3	350.2	223.6	220.7	260.8	277.2	340.3	347.8				
California	138.6	139.6	130.3	122.8	122.0	109.5	103.3	119.4		129.0				
Connecticut	64.5	66.0	61.5	61.7	61.0	52.6	48.8	50.4		53.5	58.3	67.9	60.4	
Florida							60.6	75.9						
White							25.5	47.7						
Colored							138.6	137.7						
Georgia	74.5	72.4	85.9	68.7	59.2	65.7	56.2	60.8	69.8					
Hawaii Territory	121.9	124.8	129.0	111.8	105.2	105.5	108.8	119.1	118.4	141.7	126.8			

<sup>1</sup> Exclusive of New York City.<sup>2</sup> No deaths.

*Monthly State mortality statistics—Continued*

## TUBERCULOSIS, ALL FORMS (31-37)—continued

	1929											Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925		
Illinois.....	98.4	70.7	73.9	68.3	64.3	54.1	59.1	—	59.1	74.3	72.9	69.7	70.2		
Indiana.....	81.6	74.9	81.2	58.2	63.4	63.2	59.3	65.1	69.0	80.5	69.2	66.0	73.4		
Iowa.....	40.6	37.3	—	36.4	33.6	24.7	27.2	28.6	38.8	—	—	—	—	39.1	
Kansas.....	36.5	41.1	42.4	34.7	35.3	33.2	25.0	35.8	—	—	—	—	—	—	—
Louisiana.....	104.2	90.6	99.2	83.3	70.0	81.7	85.1	83.6	—	—	—	—	—	77.4	
White.....	54.9	47.6	53.0	42.9	36.4	52.0	47.6	31.8	—	—	—	—	—	44.3	
Colored.....	194.7	160.6	184.1	157.6	131.9	135.3	154.2	178.8	138.0	—	—	—	—	—	—
Maryland.....	—	—	—	99.8	92.5	76.8	91.8	88.1	116.6	—	—	—	—	—	—
White.....	—	—	—	67.6	70.2	55.6	68.5	63.6	76.3	—	—	—	—	—	—
Colored.....	—	—	—	265.8	209.6	188.3	216.6	323.5	—	—	—	—	—	—	—
Michigan.....	80.6	85.7	71.3	66.2	60.0	67.3	56.9	50.9	58.7	69.2	—	—	—	—	—
Minnesota.....	65.3	55.8	57.2	49.7	51.9	46.5	38.1	35.3	51.0	50.2	—	—	—	—	—
Mississippi.....	98.5	91.4	95.8	83.5	67.7	67.3	83.5	—	—	54.6	—	—	—	—	—
White.....	41.3	38.6	39.9	30.3	31.1	27.1	40.0	—	—	22.1	—	—	—	—	—
Colored.....	150.9	139.5	147.0	132.2	99.3	103.9	119.4	—	—	84.2	—	—	—	—	—
Montana.....	—	—	—	—	—	—	44.3	—	—	—	—	—	—	—	—
Nebraska.....	42.3	36.0	25.9	29.3	27.6	25.9	—	—	—	20.7	—	—	—	—	—
New Jersey.....	84.7	76.1	70.1	75.5	72.4	65.9	69.6	71.3	79.8	65.9	72.9	84.5	75.9	—	—
New York <sup>1</sup> .....	80.6	82.3	78.4	64.7	70.3	57.7	58.5	60.0	—	67.0	68.9	69.0	88.3	—	—
North Carolina.....	102.7	91.4	—	—	—	—	—	—	87.8	84.2	—	—	—	—	—
Pennsylvania.....	68.8	69.6	63.6	62.3	56.0	52.6	53.8	52.4	—	55.5	63.4	65.3	68.7	—	—
South Carolina.....	71.2	87.8	94.0	76.0	69.5	64.6	59.4	65.9	—	65.9	77.8	—	—	—	—
South Dakota.....	48.4	60.2	48.4	55.2	65.2	39.7	36.8	38.0	78.6	60.2	—	—	—	—	—
Tennessee.....	146.9	133.2	140.5	112.9	105.9	103.9	104.5	100.6	107.1	145.9	145.0	131.2	—	—	—
White.....	107.4	102.8	109.1	79.0	81.2	78.6	84.0	78.6	99.9	—	—	—	—	—	—
Colored.....	338.3	280.6	292.8	277.6	225.4	221.5	203.4	207.3	189.6	—	—	—	—	—	—
Virginia.....	93.6	96.9	78.4	82.3	76.8	74.2	78.6	79.4	80.5	88.3	—	—	—	—	—
White.....	53.6	58.8	49.3	49.3	48.7	48.3	52.5	52.0	50.6	67.0	—	—	—	—	—
Colored.....	196.3	196.8	164.1	168.7	150.5	141.9	147.2	148.7	158.8	143.9	—	—	—	—	—
Wisconsin.....	72.0	47.8	63.4	48.3	46.3	49.0	51.8	49.0	45.9	48.6	—	—	—	—	—

## CANCER, ALL FORMS (43-49)

Alabama.....	45.0	48.2	54.7	50.8	44.4	53.4	57.2	53.0	53.5	50.5	58.6	51.6	57.3		
White.....	55.8	52.6	53.6	58.9	40.6	59.4	59.6	57.2	53.3	48.4	59.8	57.6	—	—	—
Colored.....	40.9	39.6	55.9	35.6	51.4	42.3	52.7	45.0	54.1	54.1	55.6	40.7	—	—	—
Arizona.....	61.6	69.6	46.2	37.3	47.2	25.7	37.3	38.5	64.6	57.1	—	—	—	—	—
California.....	140.7	146.0	144.5	138.8	147.6	137.0	149.6	147.1	141.5	141.5	—	—	—	—	—
Connecticut.....	103.0	116.2	100.8	103.3	119.8	119.4	109.7	120.1	110.1	110.1	100.5	100.0	112.9	—	—
Florida.....	—	—	—	—	—	—	75.9	68.1	—	—	—	—	—	—	—
White.....	—	—	—	—	—	—	86.2	79.1	—	—	—	—	—	—	—
Colored.....	—	—	—	—	—	—	53.3	44.1	—	—	—	—	—	—	—
Georgia.....	36.1	30.7	50.1	44.5	47.4	47.9	51.8	44.4	49.5	—	—	—	—	—	—
Hawaii Territory.....	59.3	67.5	80.2	59.2	36.2	91.8	69.1	68.0	59.2	50.6	54.3	—	—	—	—
Indiana.....	101.9	110.9	90.0	107.1	84.9	90.2	101.6	96.9	112.7	100.5	102.0	96.5	105.8	—	—
Iowa.....	112.7	109.1	—	111.5	106.2	102.7	81.0	154.5	119.8	121.2	—	—	—	—	—
Kansas.....	96.8	86.6	94.2	93.7	100.7	88.2	87.3	101.4	—	104.1	—	—	—	—	—
Louisiana.....	77.4	75.5	63.0	62.8	69.4	71.1	80.0	65.5	—	64.3	—	—	—	—	—
White.....	73.2	86.7	66.5	62.5	69.0	74.2	60.2	66.5	—	59.7	—	—	—	—	—
Colored.....	85.0	54.8	56.6	63.4	70.2	65.5	82.2	63.7	72.6	—	—	—	—	—	—
Maryland.....	—	—	—	99.7	124.9	112.0	126.6	138.6	92.3	—	—	—	—	—	—
White.....	—	—	—	82.0	72.9	51.8	104.8	65.9	150.4	—	—	—	—	—	—
Colored.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Michigan.....	98.3	89.0	86.7	100.5	102.8	95.1	95.1	99.6	99.8	96.4	—	—	—	—	—
Minnesota.....	112.2	98.6	96.5	97.3	110.3	113.5	121.5	105.5	108.6	110.7	—	—	—	—	—
Mississippi.....	51.6	52.6	61.1	38.8	50.0	49.6	47.3	—	—	49.3	—	—	—	—	—
White.....	57.0	55.2	78.4	44.1	62.0	49.9	62.0	—	—	56.5	—	—	—	—	—
Colored.....	46.8	50.4	45.5	34.0	39.0	49.3	33.9	—	42.7	—	—	—	—	—	—
Montana.....	—	—	—	—	—	—	86.4	—	—	—	—	—	—	—	—
Nebraska.....	100.2	101.2	100.2	102.2	72.8	93.3	—	—	—	99.4	—	—	—	—	—
New Jersey.....	105.7	110.9	117.8	123.3	104.5	123.6	113.7	110.2	119.3	119.9	102.7	113.6	114.5	—	—
New York <sup>1</sup> .....	117.9	128.4	118.1	120.1	121.0	125.9	130.5	125.2	—	115.5	117.6	120.4	128.5	—	—
Pennsylvania.....	96.6	98.0	91.0	100.4	93.4	90.8	92.6	93.6	—	100.7	99.3	99.7	87.8	—	—
South Carolina.....	56.6	49.1	43.1	43.6	36.6	33.3	46.1	39.8	—	47.0	31.0	—	—	—	—
South Dakota.....	74.3	60.2	60.1	66.9	71.9	83.0	80.3	53.6	68.6	87.0	—	—	—	—	—
Tennessee.....	63.2	53.6	59.9	62.1	58.8	63.7	51.8	73.9	62.6	66.4	64.4	—	—	—	—
White.....	62.2	50.5	52.8	61.3	56.2	62.2	53.9	72.8	65.3	—	—	—	—	—	—
Colored.....	63.2	68.8	76.8	66.0	71.5	71.0	41.2	79.5	49.5	—	—	—	—	—	—
Virginia.....	56.7	59.4	56.2	68.6	59.9	53.4	48.9	64.3	56.2	63.6	—	—	—	—	—
White.....	62.0	63.8	59.4	75.8	61.3	56.5	55.0	68.6	60.0	72.6	—	—	—	—	—
Colored.....	42.7	48.0	47.9	49.6	56.2	47.9	33.1	53.0	46.3	41.3	—	—	—	—	—
Wisconsin.....	104.7	104.9	96.8	111.2	117.6	125.7	119.6	107.1	108.4	111.2	—	—	—	—	—

<sup>1</sup> Exclusive of New York City.

## Monthly State mortality statistics—Continued

## DIABETES (57)

	1929											Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925		
Alabama	10.9	6.4	10.0	6.4	5.0	9.5	8.7	9.5	10.1	10.1	14.1	7.6	5.7		
White	12.3	5.6	12.3	4.9	5.6	11.6	6.3	11.6	10.5	11.9	16.8	8.9			
Colored	8.2	7.9	5.4	9.2	4.0	5.5	13.2	5.4	9.2	6.6	9.2	5.3			
Arizona	10.3	9.9	7.7	(*)	2.6	7.5	5.1	9.9	2.5						
California	21.4	18.1	19.0	20.4	21.4	19.5	21.2	24.6	—	24.8					
Connecticut	14.1	17.2	11.9	15.1	12.2	18.5	23.7	11.9	—	15.8					
Florida							14.2	10.3							
White							12.1	10.0							
Colored							18.7	11.0							
Georgia	6.5	6.3	7.6	10.3	—	9.1	11.0	8.0	11.8						
Hawaii Territory	13.9	16.9	17.4	19.7	3.3	17.0	19.7	3.4	13.2	6.7	7.2				
Indiana	13.8	14.1	11.9	12.2	16.3	17.2	—	15.3	17.4	14.8					
Iowa	18.0	21.3	—	16.5	11.6	16.0	20.9	27.9	17.0	29.6					
Kansas	22.5	19.2	17.2	15.4	21.2	20.6	19.3	24.5	—	15.3					
Louisiana	7.0	10.3	6.2	9.7	9.1	15.0	10.9	13.1	—	11.9					
White	6.7	8.4	2.9	11.2	18.3	11.2	14.5	—	15.4						
Colored	7.1	13.7	12.4	6.9	5.1	8.8	10.3	10.6	5.3						
Maryland				21.9	13.1	13.6	14.6	15.1	24.0						
White				20.8	13.0	11.7	16.5	16.1	23.4						
Colored				22.8	13.7	23.5	4.6	9.4	27.3						
Michigan	21.2	23.3	19.3	20.3	17.4	18.0	15.4	18.0	20.8	26.4					
Minnesota	13.9	14.7	15.2	9.5	21.2	13.9	13.0	17.9	20.3	26.0					
Mississippi	6.8	7.2	2.0	8.6	4.6	4.1	8.5	—	6.6						
White	7.1	6.9	1.4	8.3	4.1	4.3	11.0	—	8.2						
Colored	6.5	7.6	2.6	8.8	5.0	3.9	6.3	—	5.0						
Montana							8.9	—							
Nebraska	24.2	20.1	17.3	25.9	17.6	18.1	—	19.0							
New Jersey	24.5	22.2	22.6	22.8	17.9	19.1	24.0	22.9	26.5	26.2	31.7	20.4			
New York <sup>1</sup>	22.9	27.1	22.3	25.4	20.1	20.9	25.8	24.1	—	20.4	23.9	22.3	22.8		
Pennsylvania	23.4	21.8	16.2	15.2	13.9	20.3	24.0	18.3	—	21.3	19.4	19.3	18.4		
South Carolina	5.2	7.6	3.3	10.7	11.4	9.1	5.7	6.5	—	8.5	6.6				
South Dakota	8.6	21.7	20.7	10.0	20.1	8.6	18.4	15.6	26.8	31.8					
Tennessee	9.2	8.0	9.2	8.0	8.9	10.7	7.5	13.1	14.6	8.5					
White	8.2	10.2	7.6	9.1	7.4	9.4	7.9	13.5	14.2						
Colored	14.2	11.0	17.2	2.8	16.5	17.0	5.3	11.4	16.5						
Virginia	10.9	7.8	7.1	10.1	10.1	11.3	10.5	9.9	19.7	13.3					
White	13.1	5.1	0.5	9.5	11.4	12.4	9.5	13.1	22.1	11.4					
Colored	5.1	14.9	8.6	11.6	6.6	8.5	13.2	1.7	13.2	18.2					

## DISEASES OF THE NERVOUS SYSTEM (70-86)

Alabama	108.3	111.2	97.0	87.0	96.1	98.8	103.0	94.1	119.0	109.4					
White	97.0	99.5	79.7	69.4	78.5	81.1	89.0	78.9	90.5	100.9					
Colored	129.4	133.2	132.2	120.0	129.2	132.2	129.2	122.6	155.6	125.3					
Arizona	112.9	104.3	82.1	72.0	64.6	69.3	62.1	79.6	91.9	106.8					
California	143.4	125.0	139.0	130.8	118.9	118.9	114.5	127.1	—	154.1					
Florida							107.6	119.9							
White							86.2	107.9							
Colored							154.6	146.0							
Iowa	144.3	134.3	123.6	120.7	110.7	111.0	202.2	142.6	144.0						
Kansas	139.2	143.7	135.9	120.6	132.8	103.4	121.9	127.3	161.7						
Louisiana	91.7	91.2	101.7	79.7	85.7	81.7	111.1	104.2	106.1						
White	80.0	64.3	55.8	69.0	69.9	73.2	80.5	76.1	80.9						
Colored	113.3	140.5	131.0	99.3	114.8	97.3	150.7	155.8	152.2						
Maryland				115.8	96.9	118.2	132.6	137.8	173.4						
White				114.5	94.5	113.8	120.6	134.4	155.2						
Colored				123.0	106.4	141.3	164.0	150.7	268.8						
Michigan	138.6	145.2	126.1	115.2	125.0	120.1	129.5	130.1	136.7	161.8					
Minnesota	99.7	100.8	82.2	91.3	77.4	78.7	81.8	99.7	94.7	90.9					
Montana						77.6	—	—	—						
Nebraska	108.9	120.4	100.3	77.8	92.8	91.6	—	—	96.8						
New Jersey	128.3	112.5	96.5	103.5	88.7	107.6	108.8	117.8	130.0	118.9	123.1	145.3	152.4		
New York <sup>1</sup>	160.4	160.3	119.7	125.9	118.9	126.7	137.1	140.6	—	136.6	141.3	148.8	160.8		
Pennsylvania	122.4	119.6	94.0	98.0	93.6	98.7	104.2	106.9	119.8						
South Dakota	96.8	83.6	81.2	70.2	98.7	83.0	87.0	74.0	123.8	130.5					
Tennessee	103.6	106.4	104.1	98.8	83.8	91.9	101.6	98.2	128.5						
White	90.3	85.9	91.5	81.8	75.5	75.1	93.1	83.3	120.4						
Colored	167.7	206.3	250.2	181.4	123.7	173.2	142.9	170.4	167.7						
Virginia	125.7	108.4	97.8	111.6	86.0	105.4	104.7	110.6	116.6	110.8	112.1	145.3	152.4		
White	101.2	88.4	80.5	97.3	60.0	84.2	91.0	92.7	98.7	85.3					
Colored	189.9	160.4	158.0	148.9	153.8	160.6	140.6	157.2	168.7	210.0					

<sup>1</sup> Exclusive of New York City.<sup>2</sup> No deaths.

## Monthly State mortality statistics—Continued

## CEREBRAL HEMORRHAGE, APoplexy (74)

	1929											Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925		
Alabama.....	63.7	68.4	56.6	56.3	55.8	60.0	60.9	57.7	67.7	65.6	68.9	64.8	54.4		
White.....	54.3	58.9	44.9	42.8	46.3	56.5	51.2	49.2	58.2	63.9	62.7	61.3			
Colored.....	79.0	84.4	76.3	81.8	73.6	92.7	79.1	73.6	85.7	63.3	80.3	71.0			
Arizona.....	46.2	59.6	46.2	22.4	32.3	46.2	39.7	51.3	57.1	42.2					
California.....	100.9	91.7	95.3	93.8	89.9	81.2	86.6	92.7		112.2					
Florida.....								87.6	84.5						
White.....								70.5	70.3						
Colored.....								125.3	115.7						
Georgia.....	58.1	67.6	77.5	69.5	59.6	69.9	65.8	60.1	23.8	59.2	67.5	65.2			
Hawaii Territory.....	48.8	50.6	45.3	72.4	55.9	57.8	60.1		105.8	122.7	140.1	123.3	113.1	106.5	
Indiana.....	104.2	107.1	106.5	104.5	85.6	91.9									
Iowa.....	108.7	98.4		88.7	89.7	85.7	86.8	147.9	90.9						
Kansas.....	110.8	112.9	106.8	93.0	102.7	81.6	95.6								
Louisiana.....	61.2	62.2	61.8	50.1	51.3	59.9	76.7	66.1							
White.....	51.1	44.8	49.1	44.8	39.2	53.0	63.4	49.1							
Colored.....	79.6	94.2	84.9	60.0	73.7	72.6	101.1	97.3							
Maryland.....				88.9	72.9	84.3	105.6	96.4	126.8						
White.....				88.5	73.7	78.0	98.9	95.9	118.0						
Colored.....				91.1	68.3	117.7	141.3	98.9	173.1						
Michigan.....	100.2	102.3	89.6	80.0	82.6	85.3	95.8	91.2	102.3	115.2					
Minnesota.....	71.5	77.9	63.0	64.0	58.8	56.8	60.6	78.7	74.0	74.4					
Mississippi.....	64.5	77.6	63.2	71.0	64.4	63.9	84.1			61.8					
White.....	59.8	66.2	58.4	55.2	52.4	62.7	78.6			62.0					
Colored.....	69.0	88.2	67.6	85.6	75.4	64.9	89.2			61.6					
Montana.....							55.4								
Nebraska.....	82.1	92.8	72.6	60.2	71.1	71.7				76.9					
New Jersey.....	90.1	85.1	67.2	75.5	67.8	76.7	80.1	89.2	103.5						
New York <sup>1</sup> .....	115.6	120.8	95.1	95.3	84.2	96.4	109.6	110.7		107.2	107.2	112.3	149.0		
Pennsylvania.....	83.4	87.5	71.7	76.0	64.5	71.9	77.7	82.8		92.0	88.1	91.2	63.9		
South Dakota.....	55.3	53.5	50.1	45.2	51.9	48.4	55.9	34.6	85.3	78.6					
Tennessee.....	55.9	69.6	59.3	53.2	52.7	55.9	63.1	63.7	77.6						
White.....	45.8	53.4	51.6	47.1	47.1	48.7	55.5	51.0	70.4						
Colored.....	105.2	148.6	96.7	82.6	79.7	90.9	85.2	125.0	112.7						
Virginia.....	90.3	71.3	78.4	84.6	57.6	70.4	78.2	85.0	88.2	82.8					
White.....	73.1	57.5	63.4	74.6	41.1	51.6	69.5	69.2	72.0	56.9					
Colored.....	133.0	107.5	117.9	110.8	100.9	119.6	100.9	126.5	130.7	130.5					

## DISEASES OF THE CIRCULATORY SYSTEM (87-96)

Alabama.....	141.4	149.2	134.3	132.3	138.7	130.0	148.7	152.3	175.3	151.5					
White.....	119.5	113.5	107.9	89.7	107.2	97.8	124.0	120.9	138.1	128.3					
Colored.....	182.6	216.2	183.9	212.3	197.8	190.8	195.1	211.2	245.2	195.1					
Arizona.....	112.9	86.9	136.0	129.2	62.1	100.1	114.3	136.0	166.4	233.4					
California.....	360.2	335.7	326.1	294.1	304.2	286.8	312.4	336.0		387.0					
Florida.....							165.2	190.6							
White.....							160.3	180.7							
Colored.....							175.9	212.1							
Iowa.....	282.6	271.6		222.1	190.6	231.0	240.0	340.1	295.8	329.8					
Kansas.....	198.9	198.0	179.0	160.4	158.5	175.0	182.9	196.3		193.6					
Louisiana.....	209.6	195.0	195.9	196.8	178.1	175.3	201.7	217.8		202.2					
White.....	164.8	148.3	154.2	149.2	140.8	128.2	150.1	180.2		165.7					
Colored.....	292.0	280.9	272.6	284.3	246.7	262.0	296.3	286.7		269.0					
Maryland.....				239.7	140.4	218.8	241.9	233.7	280.5						
White.....				230.7	105.5	199.0	230.7	248.2	273.2						
Colored.....				282.5	231.5	282.5	300.7	282.5	314.4						
Michigan.....	266.3	278.5	245.4	215.2	206.5	219.7	219.5	242.2	265.4	345.2					
Minnesota.....	178.9	189.5	176.1	171.3	153.1	161.4	168.3	175.2	208.1	269.5					
Montana.....						139.6									
Nebraska.....	173.7	209.1	146.9	168.2	130.5	176.3				163.3					
New Jersey.....	297.4	268.5	255.1	233.9	192.3	222.6	108.8	106.0	318.0	307.2	256.6	272.9	255.1		
New York <sup>1</sup> .....	360.9	341.2	297.2	301.3	305.2	304.7	337.7	347.9		358.2	318.4	315.5	248.6		
Pennsylvania.....	259.7	248.0	217.5	206.7	190.9	201.2	237.3	234.1		243.2					
South Carolina.....	269.6	296.9	312.0	272.9	206.9	277.4	318.4	323.7		264.6	253.2				
South Dakota.....	134.8	161.6	118.8	95.3	148.9	100.2	128.8	133.1	223.8	224.1					
Tennessee.....	136.6	149.2	149.8	142.6	120.0	134.2	135.1	134.7	175.0						
White.....	116.2	132.3	119.1	113.0	97.4	111.5	109.6	112.7	155.6						
Colored.....	235.9	281.1	298.5	285.8	219.9	244.2	258.4	241.4	274.8						
Virginia.....	164.4	185.2	174.3	149.1	140.4	145.1	177.9	179.1	198.4	204.4					
White.....	150.9	159.9	145.0	130.8	105.5	121.5	157.4	162.0	175.1	180.7					
Colored.....	200.0	261.4	251.2	196.8	231.3	206.8	231.5	233.9	259.7	266.9					

<sup>1</sup> Exclusive of New York City.

*Monthly State mortality statistics—Continued*

## DISEASES OF THE HEART (57-90)

	1929											Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925		
Alabama	132.6	140.4	125.0	124.0	125.4	122.0	136.8	136.2	158.8	140.9	125.7	109.2	125.0		
White	110.8	105.1	96.9	86.9	93.9	90.5	111.4	128.3	115.6	115.1	95.3				
Colored	171.7	205.7	177.1	193.8	181.6	181.3	184.6	193.5	216.2	187.2	144.7	134.1			
Arizona	112.9	79.5	120.6	119.2	96.9	84.7	104.3	151.4	141.6	231.0					
California	317.0	299.0	286.3	258.7	267.5	259.6	263.9	312.4		344.9					
Connecticut	104.3	109.0	155.0	170.0	154.3	153.5	187.1	162.4		198.3	148.8	173.6	214.0		
Florida								181.6	171.6						
White								144.5	160.7						
Colored								165.3	195.6						
Georgia	107.5	105.9	141.7	117.7	102.9	109.8	117.3	101.0	140.8						
Hawaii Territory	132.5	141.7	118.5	92.1	100.0	119.1	95.4	136.1	108.5	108.0	108.7				
Indiana	199.2	228.0	222.2	187.6	167.9	182.2		170.5	184.2	269.5	183.2	179.0	165.5		
Iowa	251.1	239.6		197.4	167.3	209.5	209.5	303.0	197.4	292.9					
Kansas	173.1	175.2	153.9	139.9	131.5	151.8	162.3	172.4		171.2					
Louisiana	192.8	185.6	177.8	182.9	167.8	159.7	190.2	200.8		187.8					
White	150.3	137.1	137.8	138.9	131.5	115.6	137.1	162.9		152.2					
Colored	270.8	268.9	251.3	263.8	233.0	240.7	287.8	269.0		233.1					
Maryland				204.0	199.6	183.7	218.6	224.4	254.3						
White				198.6	184.7	174.8	208.1	216.9	245.4						
Colored				232.4	278.0	230.7	273.4	263.7	296.2						
Michigan	238.5	240.0	218.1	285.2	177.7	186.6	185.5	214.9	230.8		200.3				
Minnesota	100.1	152.7	136.7	140.6	121.5	127.8	132.8	189.5	172.6	231.4					
Mississippi	106.7	111.8	108.0	127.0	111.8	87.6	124.3			88.7					
White	95.5	95.1	84.1	91.0	84.8	69.8	113.1			80.0					
Colored	117.1	127.2	130.1	150.0	118.1	103.9	134.5			96.8					
Montana							126.3								
Nebraska	173.7	187.3	132.2	145.5	117.1	152.9				140.8					
New Jersey	276.1	236.0	226.7	214.8	273.5	207.3	241.9		289.0						
New York <sup>1</sup>	322.0	202.6	257.9	262.4	261.6	258.6	292.4	295.9		312.0	275.2	270.4	290.8		
Pennsylvania	232.3	221.3	196.7	185.9	172.8	178.3	214.3	228.7		222.0	225.0	214.0	190.0		
South Dakota	115.8	142.2	102.0	76.9	117.1	95.0	112.1	103.7		102.8	204.0				
Tennessee	125.0	137.9	135.7	128.0	106.4	122.5	120.9	122.1	155.8		158.0				
White	92.7	122.6	108.5	97.7	83.5	102.1	94.3	100.9	135.1						
Colored	201.8	211.8	267.2	274.8	217.1	221.5	250.1	224.4	255.6						
Virginia	149.3	171.0	156.4	129.5	121.6	120.0	158.7	164.4	180.2	188.4					
White	134.5	145.4	129.3	121.3	90.1	107.8	137.8	146.9	158.0	168.1					
Colored	188.0	238.2	227.3	186.9	206.7	184.6	213.4	210.2	238.2	241.5					

## DISEASES OF THE RESPIRATORY SYSTEM (97-107)

Alabama	102.6	84.7	61.0	37.1	40.7	42.1	68.6	86.1	142.3	141.4					
White	84.7	63.1	48.5	24.5	34.3	39.8	58.9	72.4	117.7	114.2					
Colored	136.2	125.3	84.5	60.7	52.7	46.3	87.0	111.7	188.5	192.5					
Arizona	197.6	171.4	166.8	101.8	74.0	87.3	79.5	187.4	226.5	320.4					
California	139.1	98.5	92.1	64.4	56.3	63.6	76.0	117.2		150.2					
Florida							54.2	60.8							
White							35.2	56.5							
Colored							96.0	99.2							
Iowa	82.2	71.8		43.2	35.4	47.6	54.3	58.9	110.6	139.5					
Kansas	86.2	50.0	33.8	20.5	37.2	27.8	37.2	67.0		61.0					
Louisiana	80.5	65.5	61.8	51.3	52.2	54.3	79.7	118.5		102.9					
White	51.1	42.0	49.1	28.9	30.2	37.6	60.6	81.9		79.0					
Colored	134.5	107.9	84.9	92.5	87.4	85.0	114.8	188.8		146.9					
Maryland				56.1	53.2	61.0	96.9	116.7	161.0						
White				34.7	37.3	48.4	74.6	88.7	137.0						
Colored				168.6	136.7	127.1	209.6	263.7	267.1						
Michigan	130.1	121.8	87.5	42.6	45.4	51.9	70.0	73.1	112.8	219.8					
Minnesota	74.2	71.8	49.2	35.0	32.9	43.4	64.9	67.1	103.8	153.1					
Montana						24.4									
Nebraska	75.2	56.9	40.6	22.6	17.7	36.8				30.2					
New Jersey	116.9	101.4	62.7	50.5	45.3	49.4	60.0	92.3	128.8						
New York <sup>1</sup>	134.2	100.2	73.6	46.7	48.2	51.1	86.2	87.0		104.4	98.7	117.0	143.8		
Pennsylvania	117.6	99.1	67.1	47.7	47.8	61.2	90.1	95.2		112.7					
South Dakota	81.2	75.3	44.9	46.8	55.2	31.1	35.1	29.4	118.7	145.5					
Tennessee	97.7	74.8	50.1	44.7	50.4	66.6	79.5	103.6	171.8						
White	63.3	59.0	37.5	36.9	41.5	54.6	67.6	85.1	153.3						
Colored	167.7	181.3	110.9	82.5	93.4	125.0	137.4	193.1	261.1						
Virginia	79.9	71.8	41.6	35.2	38.4	41.1	62.2	80.8	134.9	113.9					
White	61.4	53.7	30.7	31.0	26.5	26.8	43.0	65.3	104.3	95.4					
Colored	128.2	119.1	70.1	46.3	69.5	78.6	112.5	152.1	215.0	162.1					

<sup>1</sup> Exclusive of New York City.

*Monthly State mortality statistics—Continued*

## PNEUMONIA, ALL FORMS (100, 101)

	1929											Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925		
Alabama.....	97.9	70.8	53.4	32.5	34.8	31.7	56.7	75.7	129.5	131.2	143.0	93.7	157.0		
White.....	80.4	60.3	41.3	21.7	28.0	32.6	47.7	62.3	108.6	104.4	136.3	85.7			
Colored.....	129.4	116.0	76.3	52.7	47.5	30.0	73.8	100.8	168.8	180.6	155.5	107.5			
Arizona.....	154.9	144.1	148.9	67.1	47.2	56.5	64.6	146.3	188.8	337.8					
California.....	119.4	83.5	76.9	54.8	45.2	47.8	62.5	100.4		139.9					
Connecticut.....	104.5	86.8	54.1	43.8	35.2	44.5	66.7	69.7		71.0	72.1	78.0	137.6		
Florida.....							39.2	59.5							
White.....							26.7	47.7							
Colored.....							66.6	85.4							
Georgia.....	70.3	46.7	52.4	34.2	24.3	39.1	47.1	60.0	102.9						
Hawaii Territory.....	217.5	202.4	139.4	121.7	157.9	105.5	102.0	95.3	92.1	141.7	210.1				
Illinois.....	92.2	86.6	57.6	34.2	30.7	36.2	50.9			111.8	210.5	107.8	104.6	91.2	
Indiana.....	83.5	85.6	50.2	24.8	38.2	55.2	71.9	77.4	134.6	233.2	117.0	120.6	139.6		
Iowa.....	71.7	40.2		36.4	26.7	37.6	45.1	82.9	95.5	145.0					
Kansas.....	76.9	41.1	23.9	13.5	28.2	23.2	30.2	61.7			50.4				
Louisiana.....	68.0	52.5	58.0	43.5	45.9	48.7	67.0	105.4			88.6				
White.....	41.4	31.7	45.3	24.2	29.8	32.8	50.4	71.3			67.4				
Colored.....	116.8	90.8	81.4	78.8	75.4	77.9	97.6	168.1			127.4				
Maryland.....				46.6	45.2	52.0	89.6	102.4	150.1						
White.....				27.8	31.2	41.2	68.8	75.3	130.1						
Colored.....				145.5	118.5	108.3	205.0	244.8	255.2						
Michigan.....	114.2	105.7	73.4	33.6	33.9	41.3	62.8	61.0	93.4	190.3					
Minnesota.....	68.4	65.3	39.8	28.1	29.4	36.2	56.2	60.3	101.2	147.5					
Mississippi.....	63.2	23.8	26.5	15.1	19.7	38.7	43.4				28.9				
White.....	48.4	41.4	17.1	13.8	23.4	44.2	38.6				20.2				
Colored.....	76.8	36.5	35.0	10.4	16.3	33.8	47.8				31.4				
Montana.....						17.7									
Nebraska.....	65.7	51.0	35.4	16.7	11.7	29.4				23.3					
New Jersey.....	99.4	91.2	51.6	44.1	37.0	39.8	61.3	82.5	116.8	160.5	61.2	70.8	79.8		
New York <sup>1</sup> .....	116.7	92.4	62.8	37.0	39.3	42.5	71.8	72.9		89.2	83.0	100.2	118.1		
North Carolina.....	113.5	81.0							158.7	151.9					
Pennsylvania.....	97.7	85.0	82.7	38.9	37.5	49.3	75.3	80.9		97.1	92.2	120.0	140.0		
South Carolina.....	90.7	77.1	62.0	37.9	44.8	58.1	70.7	78.3		95.9	89.7				
South Dakota.....	62.2	68.6	34.6	36.8	46.8	25.9	26.8	26.4	95.3	117.1					
Tennessee.....	66.6	66.4	39.4	33.9	41.4	55.9	66.4	90.9	154.8	122.4	163.0	116.9			
White.....	73.9	53.4	31.7	28.4	34.1	41.6	56.9	75.7	137.4						
Colored.....	147.8	129.3	76.8	60.5	70.7	90.4	118.2	164.7	239.1						
Virginia.....	68.0	60.4	36.9	26.5	28.8	31.7	52.1	77.0	120.7	98.3					
White.....	50.9	44.9	28.1	24.0	20.2	20.2	36.0	53.6	92.3	80.3					
Colored.....	112.8	100.9	59.8	33.1	51.3	61.5	94.3	138.4	195.2	145.5					
Wisconsin.....	84.5	78.9	49.0	30.0	29.9	38.3	0	69.6	92.5	164.3					

## DISEASES OF THE DIGESTIVE SYSTEM (106-127)

Alabama.....	61.9	106.2	147.5	139.1	107.5	100.7	67.7	60.5	63.1	67.7					
White.....	46.3	101.6	143.4	36.0	100.2	92.0	64.5	51.4	61.0	66.6					
Colored.....	91.3	104.7	155.3	145.1	121.3	117.2	73.8	77.7	67.2	69.9					
Arizona.....	79.6	201.2	264.4	139.1	206.2	238.7	166.4	92.4	109.3	106.8					
California.....	94.5	92.0	103.9	112.9	103.0	111.1	109.1	103.6		90.0					
Florida.....							93.5	104.3							
White.....							76.5	96.2							
Colored.....							130.6	115.7							
Hawaii Territory.....	198.7	182.2	174.3	180.9	157.9	132.7	115.1	193.9	138.1	145.1	130.4				
Iowa.....	66.6	62.1		68.9	62.1	66.6	62.1	74.9	84.9	62.6					
Kansas.....	84.2	62.9	76.3	85.3	91.1	82.2	80.9	67.6		76.9					
Louisiana.....	78.6	112.3	128.5	122.6	105.7	111.1	104.3	102.9		87.4					
White.....	56.9	87.7	86.7	106.3	86.7	86.7	82.1	97.3		65.5					
Colored.....	118.0	157.6	205.3	152.4	140.5	155.8	150.7	113.3		127.4					
Maryland.....				96.2	142.8	115.2	98.9	75.3	79.4						
White.....				80.7	124.9	99.5	83.3	67.2	77.2						
Colored.....				173.1	236.9	193.1	168.6	117.7	91.1						
Michigan.....	80.6	90.5	89.0	78.2	95.7	128.3	101.6	74.5	83.1	90.8					
Minnesota.....	63.5	67.9	59.0	64.5	64.0	63.0	58.2	60.8	73.5	58.4					
Montana.....							88.6								
Nebraska.....	73.4	71.9	65.3	71.1	86.1	73.4				86.4					
New Jersey.....	76.1	25.8	73.6	71.8	92.7	79.5	74.2	69.9	74.6	57.2	62.1	59.9			
New York <sup>1</sup> .....	69.9	71.5	62.0	64.7	79.0	63.6	80.2	70.3		72.4	80.4	71.9	89.8		
Pennsylvania.....	75.0	61.4	62.0	71.5	87.8	120.3	82.3	65.5		73.8					
South Dakota.....	38.8	78.6	44.9	58.5	80.3	95.0	58.5	39.7	78.6	87.0					
Tennessee.....	70.0	71.1	110.9	171.8	132.2	98.2	101.2	74.9	68.2						
White.....	55.1	63.0	142.1	160.7	127.2	90.9	89.1	65.1	63.6						
Colored.....	142.1	110.0	104.4	224.4	162.2	133.5	159.4	122.1	90.7						
Virginia.....	52.0	60.4	102.5	104.3	99.7	69.9	64.9	54.8	54.9	51.7					
White.....	47.7	36.7	73.8	87.9	87.8	59.4	56.9	50.9	42.3	39.8					
Colored.....	63.2	122.4	177.7	147.2	130.7	97.4	86.0	64.9	87.7	82.7					

<sup>1</sup> Exclusive of New York City.

*Monthly State mortality statistics—Continued*

DIARRHEA AND ENTERITIS UNDER 2 YEARS (113)

	1929										Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925	
Alabama	12.4	40.8	64.8	62.7	33.4	28.4	22.0	12.8	13.3	13.3	18.8	10.4	13.8	
White	5.8	38.5	65.9	67.3	30.8	21.0	11.6	12.6	13.3	19.7	10.3	—	—	
Colored	24.5	44.8	62.7	54.1	38.2	31.3	23.7	15.0	14.5	13.2	17.1	10.5	—	
Arizona	28.2	131.7	202.8	136.6	139.1	148.9	114.3	43.6	29.8	47.2	—	—	—	
California	11.2	17.6	23.0	28.4	27.1	27.0	23.0	10.2	10.2	15.0	—	—	—	
Connecticut	5.2	11.5	8.2	5.0	17.9	(*)	13.8	—	—	4.5	17.6	7.8	8.7	
Florida	—	—	—	—	—	—	18.4	14.7	—	—	—	—	—	
White	—	—	—	—	—	—	14.6	12.6	—	—	—	—	—	
Colored	—	—	—	—	—	—	26.7	19.3	—	—	—	—	—	
Georgia	12.2	22.8	35.3	29.8	27.6	14.8	12.9	14.4	7.7	—	—	—	—	
Hawaii Territory	—	—	—	—	—	98.7	65.8	78.3	82.2	—	—	—	—	
Indiana	6.7	7.4	10.3	25.6	47.1	43.7	23.7	6.1	7.8	5.2	4.5	7.2	10.3	
Iowa	4.5	2.9	—	3.9	5.8	4.5	1.9	7.3	2.9	1.9	—	—	—	
Kansas	7.3	4.5	6.0	12.2	19.2	24.5	15.4	7.3	—	12.6	—	—	—	
Louisiana	22.4	34.4	49.3	34.4	31.4	29.9	29.6	22.5	—	23.7	—	—	—	
White	15.4	21.4	27.0	26.9	22.4	19.3	21.5	21.2	—	19.3	—	—	—	
Colored	35.4	58.2	90.3	44.5	48.0	49.6	44.5	24.8	—	31.8	—	—	—	
Maryland	—	—	—	—	—	—	19.7	—	—	—	—	—	—	
White	—	—	—	—	—	—	16.5	—	—	—	—	—	—	
Colored	—	—	—	—	—	—	36.5	—	—	—	—	—	—	
Michigan	11.1	12.6	11.4	10.0	23.1	44.3	28.0	10.3	9.2	13.3	—	—	—	
Minnesota	3.6	3.9	3.1	2.2	6.5	3.6	4.3	2.7	4.8	3.0	—	—	—	
Mississippi	12.2	32.9	55.0	50.0	25.0	18.3	22.4	—	—	22.4	—	—	—	
White	14.3	28.9	59.8	49.6	15.2	18.5	22.1	—	—	19.3	—	—	—	
Colored	10.4	36.6	103.4	50.4	33.9	18.2	22.6	—	—	25.1	—	—	—	
Montana	—	—	—	—	—	—	19.9	—	—	—	—	—	—	
Nebraska	5.2	3.3	3.5	3.3	12.5	6.9	—	—	—	17.3	—	—	—	
New Jersey	10.5	7.7	6.4	10.2	17.3	29.6	19.4	11.8	10.2	12.6	0.4	15.4	12.8	
New York <sup>1</sup>	7.9	8.7	7.2	6.0	13.9	23.9	16.7	9.4	—	10.0	13.7	14.0	19.8	
North Carolina	11.2	38.5	—	—	—	—	—	—	—	15.6	30.1	—	—	
Pennsylvania	12.3	10.2	8.6	15.6	28.4	52.2	26.4	15.0	—	15.8	22.4	22.9	25.4	
South Dakota	6.9	3.3	1.7	1.7	10.0	17.3	3.3	1.7	5.0	8.4	—	—	—	
Tennessee	6.8	10.4	35.9	77.7	33.6	36.5	29.2	12.6	12.7	18.4	14.2	14.8	—	
White	5.3	7.4	37.7	74.4	35.6	38.7	27.8	13.5	14.8	—	—	—	—	
Colored	14.2	24.8	39.8	93.5	44.0	25.6	35.7	8.5	2.7	—	—	—	—	
Virginia	3.3	12.3	37.3	50.3	37.0	27.9	16.5	11.8	9.6	—	7.3	—	—	
White	3.3	6.3	18.9	41.7	32.9	26.8	17.1	10.4	7.0	4.4	—	—	—	
Colored	3.4	28.1	85.5	72.8	48.0	30.8	14.9	15.4	16.5	14.9	—	—	—	
Wisconsin	11.9	14.8	9.5	6.5	8.0	9.4	8.8	6.6	13.6	—	—	—	—	

## NEPHRITIS (128,129)

Alabama	91.7	104.3	96.9	95.2	92.9	76.1	99.3	100.3	125.4	98.8	—	—	—	—
White	79.7	80.6	71.0	84.1	79.2	60.1	70.1	81.8	105.1	91.8	—	—	—	—
Colored	114.4	149.0	145.8	116.0	118.7	106.3	154.3	121.3	163.5	112.1	—	—	—	—
Arizona	53.9	59.7	30.8	39.7	32.3	35.9	22.4	33.4	49.7	44.7	—	—	—	—
California	123.2	106.7	108.7	98.5	91.0	84.9	101.0	104.1	—	130.1	—	—	—	—
Connecticut	68.2	116.2	24.9	46.6	35.2	26.3	70.3	60.8	—	67.1	—	—	—	—
Florida	—	—	—	—	—	—	124.3	123.3	—	—	—	—	—	—
White	—	—	—	—	—	—	100.8	118.0	—	—	—	—	—	—
Colored	—	—	—	—	—	—	175.9	135.0	—	—	—	—	—	—
Georgia	117.8	111.1	123.1	115.8	111.8	119.3	126.8	125.0	137.5	—	—	—	—	—
Indiana	95.0	92.7	74.3	73.8	63.8	70.9	83.5	87.1	96.4	74.8	73.4	72.3	—	—
Iowa	61.6	56.7	—	42.2	36.9	52.1	41.2	61.0	46.6	56.3	—	—	—	—
Kansas	94.8	93.0	92.8	77.6	69.9	80.2	75.7	100.1	—	108.7	—	—	—	—
Louisiana	112.3	115.0	120.4	99.0	108.7	106.7	118.3	121.0	—	124.2	—	—	—	—
White	84.8	79.3	90.6	82.1	85.6	60.6	94.2	101.2	—	99.2	—	—	—	—
Colored	162.8	183.3	175.2	130.2	145.6	136.3	162.7	157.5	—	169.9	—	—	—	—
Maryland	—	—	123.9	133.3	124.2	127.4	144.6	169.0	—	—	—	—	—	—
White	—	—	117.1	127.5	110.2	148.3	138.9	166.6	—	—	—	—	—	—
Colored	—	—	161.4	154.9	107.8	205.0	174.2	182.3	—	—	—	—	—	—
Michigan	73.4	67.4	72.6	59.8	62.6	62.8	61.0	50.9	78.7	82.3	—	—	—	—
Minnesota	54.1	49.7	48.7	42.4	30.4	40.2	46.7	57.7	63.6	71.4	—	—	—	—
Mississippi	112.1	70.3	117.5	106.6	92.0	99.9	120.9	—	—	112.4	—	—	—	—
White	80.6	101.2	74.1	84.1	74.5	68.4	99.3	—	—	78.6	—	—	—	—
Colored	128.5	132.7	147.0	127.2	108.1	128.5	139.5	—	—	143.3	—	—	—	—
Montana	—	—	—	—	—	—	68.7	—	—	31.1	—	—	—	—
Nebraska	57.0	51.0	51.8	56.9	51.8	45.8	—	—	—	—	—	—	—	—
New Jersey	104.4	102.6	101.3	85.7	78.0	89.8	99.5	93.0	112.5	118.9	111.5	108.5	106.2	—
New York <sup>1</sup>	124.1	111.0	103.4	91.0	90.3	94.7	102.8	99.8	—	99.6	112.2	113.0	126.0	—
Pennsylvania	102.3	105.8	88.6	83.9	80.7	85.4	98.4	102.0	—	109.3	97.8	106.0	103.0	—
South Dakota	31.1	35.1	36.8	38.5	51.9	32.8	30.1	41.5	68.5	63.6	—	—	—	—
Tennessee	77.9	69.2	71.0	73.9	69.6	76.4	73.9	72.0	83.3	—	—	—	—	—
White	67.5	62.5	59.8	57.9	60.2	64.5	60.2	64.5	75.5	—	—	—	—	—
Colored	125.1	101.8	125.1	151.2	115.4	133.5	140.2	113.6	120.9	—	—	—	—	—
Virginia	89.8	74.1	91.7	97.4	88.2	95.4	89.6	95.4	114.8	112.0	—	—	—	—
White	79.7	67.0	81.0	88.5	72.7	78.4	81.8	84.2	93.5	105.5	—	—	—	—
Colored	116.2	92.6	119.6	120.8	120.0	140.1	110.8	124.8	170.4	129.0	—	—	—	—

\* Exclusive of New York City.

\* No deaths reported.

March 7, 1930

*Monthly State mortality statistics—Continued*

## PUERPERAL STATE (143-150)

	1929										Corresponding month for—			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1928	1927	1926	1925	
Alabama.....	23.8	23.9	29.0	12.4	25.2	23.2	18.3	17.0	15.6	16.5	18.8	17.5	17.7	
White.....	17.4	19.6	20.3	8.4	20.3	13.8	12.6	11.6	13.3	14.0	18.9	14.0	-----	
Colored.....	35.4	31.6	45.0	19.8	34.3	40.9	29.0	27.2	19.8	21.1	18.4	23.7	-----	
Arizona.....	12.8	12.4	12.8	5.0	14.0	7.7	5.0	2.6	5.0	7.5	-----	-----	-----	
California.....	12.8	10.3	7.7	11.4	9.6	6.7	8.8	10.1	-----	7.7	-----	-----	-----	
Connecticut.....	4.4	5.0	12.6	8.6	8.6	3.7	8.6	9.6	-----	6.0	8.4	13.3	5.6	
Florida.....	-----	-----	-----	-----	-----	20.0	17.2	-----	-----	-----	-----	-----	-----	
White.....	-----	-----	-----	-----	-----	19.4	20.1	-----	-----	-----	-----	-----	-----	
Colored.....	-----	-----	-----	-----	-----	21.3	11.0	-----	-----	-----	-----	-----	-----	
Georgia.....	14.8	19.5	13.3	13.2	18.0	22.0	18.7	15.6	18.4	-----	-----	-----	-----	
Indiana.....	10.7	12.2	15.3	10.2	11.9	10.7	7.4	9.2	13.7	8.9	9.7	10.6	9.1	
Iowa.....	10.5	8.2	8.2	8.2	11.0	7.3	7.3	7.3	7.3	9.7	-----	-----	-----	
Kansas.....	10.6	11.5	16.6	12.2	12.2	5.3	7.1	8.6	-----	12.6	-----	-----	-----	
Louisiana.....	25.6	21.1	16.8	21.7	25.4	25.0	19.3	21.2	-----	20.0	-----	-----	-----	
White.....	25.1	16.8	10.6	12.1	17.7	16.4	16.8	18.3	-----	21.2	-----	-----	-----	
Colored.....	26.5	29.1	28.3	39.4	39.4	40.7	24.0	26.5	-----	17.7	-----	-----	-----	
Maryland.....	-----	-----	11.7	14.6	7.5	7.3	6.0	6.6	-----	-----	-----	-----	-----	
White.....	-----	-----	8.7	13.0	6.3	5.2	5.4	6.0	-----	-----	-----	-----	-----	
Colored.....	-----	-----	27.3	22.8	14.1	18.2	9.4	4.6	-----	-----	-----	-----	-----	
Michigan.....	17.2	11.0	13.5	16.9	10.0	10.6	11.0	10.9	12.6	12.3	-----	-----	-----	
Minnesota.....	8.5	5.2	7.2	4.8	5.2	4.5	2.9	4.5	8.7	8.7	-----	-----	-----	
Montana.....	-----	-----	-----	-----	8.9	-----	-----	-----	-----	-----	-----	-----	-----	
Nebraska.....	6.9	10.9	14.7	10.0	6.7	9.5	-----	-----	-----	6.9	-----	-----	-----	
New Jersey.....	10.5	10.2	8.9	9.2	10.8	8.9	8.0	8.3	9.6	-----	-----	-----	-----	
New York <sup>1</sup> .....	4.1	11.2	8.5	8.3	6.8	8.8	8.5	6.8	-----	8.7	11.5	7.9	10.0	
South Dakota.....	15.6	6.7	6.9	13.4	11.7	8.6	13.4	6.9	5.0	10.0	-----	-----	-----	
Tennessee.....	20.9	16.0	8.3	17.4	15.5	13.1	12.2	16.5	17.4	7.1	5.2	-----	-----	
White.....	20.0	13.6	8.8	15.3	13.1	13.5	7.4	14.7	13.6	-----	-----	-----	-----	
Colored.....	25.5	27.5	5.7	27.5	27.5	11.4	38.7	25.6	35.7	-----	-----	-----	-----	
Virginia.....	15.1	17.8	13.7	13.3	18.3	9.0	10.1	6.6	13.7	18.3	-----	-----	-----	
White.....	10.5	10.1	11.1	10.7	9.5	5.9	7.0	5.2	7.6	12.6	-----	-----	-----	
Colored.....	27.3	38.0	20.5	19.9	23.2	17.1	18.2	10.3	29.8	33.1	-----	-----	-----	

<sup>1</sup> Exclusive of New York City.**COURT DECISION RELATING TO PUBLIC HEALTH**

*Issuance by local registrar of certified copy of death certificate.*—(Alabama Supreme Court; Scott v. Culpepper, 125 So. 643; decided Jan. 16, 1930.) The statute relating to the registration of births and deaths provided for the filing of death certificates with the local registrar and the entry of same by such registrar in a record book. It was required that this record book, when filled, be delivered by the local registrar to the probate judge for keeping as a permanent local record. Original certificates of births and deaths for any one month were not required to be transmitted by the local registrar to the State registrar until the 10th of the following month. Certified copies of the records of births and deaths registered could be obtained from the State registrar.

Other statutes gave a citizen a right to inspect and take a copy of any public writing, except as otherwise expressly provided, and also set forth that every public officer having the custody of a public writing, which a citizen had a right to inspect, was bound to give him a certified copy on demand and on payment of the legal fees.

A death certificate was filed and entered on the record book of a local registrar. On the same date and after its record, a certified

copy was demanded and the legal fee therefor tendered. In mandamus proceedings to compel the local registrar to issue such certified copy, the trial court dismissed the petition on the theory that such copy should be obtained either from the State registrar or from the office of the probate judge. But the supreme court, on appeal, pointed out that there could be a considerable period of time during which the local registrar was sole custodian of certificates and the record book in his office the sole record thereof. The supreme court held a local registrar to be a public officer and the record made by such registrar to be a public writing, and decided that the petitioner was entitled to a certified copy from the local registrar, saying:

The death certificate entered on the record book of the local registrar was a public writing in the custody of such registrar as a public officer, subject to inspection by any citizen, and to which a certified copy is due to be given upon demand and the payment of the legal fee therefor.

### DEATHS DURING WEEK ENDED FEBRUARY 22, 1930

*Summary of information received by telegraph from industrial insurance companies for the week ended February 22, 1930, and corresponding week of 1929. (From the Weekly Health Index, February 26, 1930, issued by the Bureau of the Census, Department of Commerce)*

	Week ended Feb. 22, 1930	Corresponding week, 1929
Policies in force	75,485,684	73,314,879
Number of death claims	15,322	14,838
Death claims per 1,000 policies in force, annual rate	10.6	10.6

*Deaths from all causes in certain large cities of the United States during the week ended February 22, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, February 26, 1930, issued by the Bureau of the Census, Department of Commerce)*

City	Week ended Feb. 22, 1930		Annual death rate per 1,000, corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended Feb. 22, 1930 <sup>1</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Feb. 22, 1930	Corresponding week, 1929	
Total (62 cities)	7,901	14.4	14.5	795	803	172
Akron	42			4	6	37
Albany	39	16.9	15.6	3	0	66
Atlanta	71	14.5	18.2	11	8	116
White	34			4	3	127
Colored	37	( <sup>2</sup> )	( <sup>2</sup> )	7	5	111
Baltimore	240	15.1	16.5	19	21	65
White	185			12	15	52
Colored	55	( <sup>2</sup> )	( <sup>2</sup> )	7	6	113
Birmingham	67	15.7	15.0	7	10	65
White	31			3	4	48
Colored	36	( <sup>2</sup> )	( <sup>2</sup> )	4	6	95
Boston	260	17.0	16.2	28	30	79
Bridgeport	37			4	5	68

See footnotes at end of table.

March 7, 1930

*Deaths from all causes in certain large cities of the United States during the week ended February 22, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929—Continued*

City	Week ended Feb. 22, 1930		Annual death rate per 1,000, corre- sponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended Feb. 22, 1930
	Total deaths	Death rate		Week ended Feb. 22, 1930	Corre- sponding week, 1929	
Buffalo	157	14.7	14.6	16	16	71
Cambridge	18	7.5	12.8	0	4	0
Camden	33	12.7	11.9	2	1	36
Canton	26	11.6	8.5	2	4	50
Chicago	812	13.4	12.7	84	61	74
Cincinnati	170			14	17	83
Cleveland	210	10.8	12.9	22	45	66
Columbus	77	13.4	16.6	7	7	68
Dallas	73	17.5	14.6	7	5	
White	61			6	4	
Colored	12	(*)	(*)	1	1	*
Dayton	42	11.9	11.0	4	3	59
Denver	104	18.4	15.2	9	5	94
Des Moines	35	12.0	15.1	6	4	104
Detroit	413	15.6	13.1	70	56	108
Duluth	24	10.7	13.4	3	0	81
El Paso	34	15.0	19.0	3	13	
Eric	20			2	4	43
Fall River	44	17.1	15.1	6	5	137
Flint	26	0.1	14.7	8	4	93
Fort Worth	42	12.8	10.7	5	5	
White	31			3	3	
Colored	11	(*)	(*)	2	5	
Grand Rapids	37	11.7	11.4	2	2	30
Houston	87			3	7	
White	60			3	3	
Colored	27	(*)	(*)	0	3	
Indianapolis	128	17.5	15.1	5	7	37
White	100			5	6	43
Colored	19	(*)	(*)	0	1	0
Jersey City	86	13.8	16.5	3	14	26
Kansas City, Kans.	37	16.3	19.0	6	4	142
White	25			4	4	106
Colored	12	(*)	(*)	2	0	435
Kansas City, Mo.	115	15.3	15.4	6	11	47
Knoxville	27	13.4	8.4	3	2	70
White	20			2	2	52
Colored	7	(*)	(*)	1	0	247
Los Angeles	282			10	30	58
Louisville	91	14.4	16.8	6	9	52
White	67			3	8	30
Colored	24	(*)	(*)	3	1	217
Lowell	32			6	0	142
Lynn	24	11.9	13.8	2	2	51
Memphis	78	21.4	17.3	3	8	36
White	32			1	1	18
Colored	46	(*)	(*)	2	7	67
Minneapolis	91	10.4	13.2	10	15	65
Nashville	53	19.8	15.7	4	5	62
White	36			3	3	62
Colored	17	(*)	(*)	1	2	63
New Bedford	25			4	5	103
New Haven	56	15.5	10.5	3	6	58
New Orleans	162	19.7	24.2	10	20	58
White	84			4	10	35
Colored	78	(*)	(*)	6	10	101
New York	1,615	14.0	14.7	182	176	77
Bronx Borough	215	11.8	12.3	24	25	56
Brooklyn Borough	570	12.9	12.7	67	55	71
Manhattan Borough	637	19.0	20.2	74	69	121
Queens Borough	159	9.7	10.3	14	23	41
Richmond Borough	34	11.8	19.7	3	4	56
Newark, N. J.	121	13.3	10.0	17	10	89
Oakland	50	0.5	14.3	4	6	48
Oklahoma City	49			8	8	157
Paterson	37	13.3	12.2	1	3	17
Philadelphia	598	15.1	14.0	45	52	67
Pittsburgh	217	16.8	16.4	31	16	114
Portland, Oreg.	66			1	2	12
Providence	74	13.5	14.4	9	4	83

*Deaths from all causes in certain large cities of the United States during the week ended February 22, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929—Continued*

City	Week ended Feb. 22, 1930		Annual death rate per 1,000, corre- sponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended Feb. 22, 1930
	Total deaths	Death rate		Week ended Feb. 22, 1930	Corre- sponding week, 1929	
Richmond	61	16.4	21.2	4	10	59
White	34			0	3	0
Colored	27	(?)	(?)	4	7	175
Rochester	100	15.9	14.8	5	11	44
St. Louis	249	15.3	16.8	15	16	49
St. Paul	46			2	5	20
Salt Lake City <sup>1</sup>	42	15.9	14.4	6	3	94
San Antonio	76	18.2	20.8	12	11	—
San Diego	50			2	2	42
San Francisco	151	13.5	15.6	8	9	55
Schenectady	24	13.4	11.2	1	2	31
Seattle	84	11.4	11.4	3	6	30
Spokane	30	14.3	15.8	2	2	52
Springfield, Mass.	44	15.3	15.3	5	1	79
Syracuse	52	13.6	16.0	5	3	62
Tacoma	26	12.3	12.3	3	2	77
Toledo	86	14.3	13.0	5	6	46
Trenton	42	15.8	16.1	5	5	93
Utica	34	17.0	16.0	4	1	114
Washington, D. C.	165	15.6	15.2	22	14	128
White	105			16	7	138
Colored	60	(?)	(?)	6	7	105
Waterbury	25			5	3	128
Wilmington, Del.	29	11.8	9.7	5	3	113
Worcester	70	18.5	16.9	9	7	117
Yonkers	20	8.6	12.9	1	5	24
Youngstown	32	9.6	9.9	1	4	16

<sup>1</sup> Annual rate per 1,000 population.

Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.

Data for 70 cities.

Deaths for week ended Friday.

In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 28; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

# PREVALENCE OF DISEASE

*No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring*

## UNITED STATES

### CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

#### Reports for Weeks Ended February 22, 1930, and February 23, 1929

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended February 22, 1930, and February 23, 1929*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929
New England States:								
Maine	3	1	26	195	10	202	0	0
New Hampshire	1	2	4	40	36	13	0	0
Vermont	2	2		17	7	13	0	0
Massachusetts	75	62	6	169	447	285	3	1
Rhode Island	18	14		11	3	57	0	0
Connecticut	20	16	10	99	13	375	2	1
Middle Atlantic States:								
New York	130	237	130	126	875	834	17	36
New Jersey	86	107	15	52	445	194	7	5
Pennsylvania	161	115			781	1,190	14	10
East North Central States:								
Ohio	28	40	19	74	515	485	3	5
Indiana	38	21		133	29	404	23	0
Illinois	171	129	25	228	674	833	6	17
Michigan	67	57	17	25	482	342	20	20
Wisconsin	15	21	21	96	951	621	5	6
West North Central States:								
Minnesota	13	11		1	292	540	1	1
Iowa	12	20		111	732		2	2
Missouri	48	63	17	60	112	334	16	23
North Dakota	1	6			59	34	2	3
South Dakota	1	2		2	107	68	1	0
Nebraska	24	17		8	484	65	8	4
Kansas	11	17	7	70	437	315	3	0
South Atlantic States:								
Delaware	3				21	11	0	0
Maryland	25	16	35	402	16	104	1	1
District of Columbia	21	18		28	15	8	0	0
West Virginia	4	16	28	140	58	195	2	0
North Carolina	37	36	36		14	118	9	2
South Carolina	11	21	985	922		1	3	0
Georgia	8	7	92	101	146	89	3	1
Florida	12	11	5	15	76	16	0	0

<sup>1</sup> New York City only.

<sup>2</sup> Week ended Friday.

*Cases of certain communicable diseases reported by telegraph by State health officers  
for weeks ended February 22, 1930, and February 23, 1929—Continued*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929
<b>East South Central States:</b>								
Kentucky	8		14		26		6	0
Tennessee	16	4	133	344	205	4	13	2
Alabama	27	44	120	891	167	177	3	3
Mississippi	16	4					22	0
<b>West South Central States:</b>								
Arkansas	5	7	80	653	9	57	2	1
Louisiana	9	29	38	107	118	84	4	0
Oklahoma <sup>1</sup>	31	17	175	437	92	4	4	7
Texas	39	32	292	321	143	86	1	3
<b>Mountain States:</b>								
Montana	1	4		5	25	116	0	0
Idaho	2	4		3	22	1	2	6
Wyoming	2	1		7	13	11	0	0
Colorado	12	16		28	170	4	3	1
New Mexico	22	11	5	3	110	6	1	0
Arizona	9	1	14	3	2	5	5	8
Utah <sup>2</sup>		4	1	5	160	1	5	10
<b>Pacific States:</b>								
Washington	14	17		20	193	135	5	2
Oregon	7	13	80	95	24	162	0	0
California	69	70	34	133	1,151	47	9	13
Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929
<b>New England States:</b>								
Maine	0	0	60	9	0	4	2	0
New Hampshire	0	0	19	5	0	0	0	0
Vermont	0	0	8	5	4	4	0	1
Massachusetts	1	0	256	240	0	0	2	3
Rhode Island	0	0	39	18	0	0	0	2
Connecticut	0	0	131	56	0	2	1	0
<b>Middle Atlantic States:</b>								
New York	2	3	461	479	1	0	16	17
New Jersey	1	1	223	134	0	0	0	0
Pennsylvania	0	0	546	332	0	0	18	12
<b>East North Central States:</b>								
Ohio	2	0	284	187	175	50	8	3
Indiana	0	0	201	227	144	35	2	14
Illinois	2	1	604	448	113	131	4	11
Michigan	1	0	305	304	62	16	3	6
Wisconsin	1	2	145	152	36	12	3	1
<b>West North Central States:</b>								
Minnesota	1	0	131	130	5	5	3	3
Iowa	0	1	103	225	50	54	1	3
Missouri	0	0	135	110	76	50	1	3
North Dakota	1	0	28	44	15	0	0	0
South Dakota	0	0	23	21	39	22	0	0
Nebraska	0	0	103	105	67	30	0	1
Kansas	0	0	158	189	68	75	3	3
<b>South Atlantic States:</b>								
Delaware	1	0	16	1	0	0	0	0
Maryland <sup>1</sup>	0	1	113	67	0	0	2	3
District of Columbia	0	0	24	25	0	0	0	0
West Virginia	0	0	45	24	15	9	5	8
North Carolina	1	2	56	46	16	19	2	2
South Carolina	0	0	12	8	1	3	16	3
Georgia	1	0	6	11	0	3	1	0
Florida	0	0	8	5	1	0	1	4

<sup>1</sup> Week ended Friday.

<sup>2</sup> Figures for 1930 are exclusive of Oklahoma City and Tulsa and for 1929 are exclusive of Oklahoma City only.

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Cases of certain communicable diseases reported by telegraph by State health officers  
for weeks ended February 22, 1930, and February 23, 1929—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929	Week ended Feb. 22, 1930	Week ended Feb. 23, 1929
<b>East South Central States:</b>								
Kentucky	0	0	62	55	14	21	0	0
Tennessee	1	0	22	34	15	2	6	4
Alabama	1	4	15	26	13	4	1	13
Mississippi	0	1	55	11	2	2	3	2
<b>West South Central States:</b>								
Arkansas	0	0	17	15	14	5	5	6
Louisiana	0	1	20	43	11	1	12	4
Oklahoma <sup>1</sup>	0	0	21	34	128	64	7	2
Texas	0	1	43	53	118	51	9	5
<b>Mountain States:</b>								
Montana	0	0	29	30	2	39	2	0
Idaho	0	0	5	8	2	24	1	2
Wyoming	0	0	15	19	16	4	0	0
Colorado	0	1	28	17	24	17	1	0
New Mexico	0	0	26	9	2	0	0	2
Arizona	0	0	9	3	18	1	10	2
Utah <sup>2</sup>	0	0	6	5	1	3	1	0
<b>Pacific States:</b>								
Washington	0	1	50	26	82	80	14	0
Oregon	0	0	58	62	28	56	1	2
California	0	2	263	361	97	65	7	4

<sup>1</sup> Week ended Friday.<sup>2</sup> Figures for 1930 are exclusive of Oklahoma City and Tulsa and for 1929 are exclusive of Oklahoma City only.

### SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Menin-gococcus menin-gitis	Diph-theria	Influenza	Malaria	Mes-sles	Pellagra	Polio-myelitis	Scarlet fever	Small-pox	Ty-phoid fever
<i>December, 1929</i>										
Colorado	16	51			75		3	180	105	9
Hawaii Territory	3	30	12		23		0	2	0	12
<i>January, 1930</i>										
Alabama	10	132	601	89	80	21	4	156	51	25
Colorado	15	24	5		235		1	144	120	7
Illinois	61	858	227	10	1,616		4	2,442	625	45
Louisiana	20	161	126	22	172	7	0	89	27	44
Maryland	7	117	180	1	45	0	1	378	0	22
Massachusetts	20	563	49	1	1,153	2	4	1,497	0	24
Michigan	137	418	24	1	1,284	1	2	1,617	381	11
Minnesota	12	110	5	2	930		1	581	35	21
Missouri	53	174	146	23	219		0	416	210	17
Nevada	3				33		0	22	0	
New Hampshire		18	27				0	97	0	
New Mexico	6	49	11	3	368	2	3	45	12	7
New Jersey	25	529	67	1	932		1	1,138	0	13
New York	70	649		6	1,893		5	2,075	58	59
North Carolina	18	250	140		71	60	1	319	151	5
Ohio	45	306	111	2	2,962		6	1,350	1,068	33
Oklahoma <sup>1</sup>	11	136	607	41	307	7	0	166	281	27
Pennsylvania	39	874			2,664		1	2,077	8	59
Rhode Island	3	75	16		7		0	147	0	2
West Virginia	9	60	133		325		2	148	92	26

<sup>1</sup> Exclusive of Oklahoma City and Tulsa.

	<i>December, 1929</i>	Cases		<i>January, 1930</i>	Cases
Chicken pox:			Dysentery:		
Colorado.....	549		Illinois.....		9
Hawaii Territory.....	30		Maryland.....		3
Conjunctivitis, infectious:			Minnesota (amebic).....		3
Hawaii Territory.....	87		New Jersey.....		1
Dysentery (amebic):			New York.....		4
Hawaii Territory.....	1		Oklahoma <sup>1</sup> .....		2
German measles:			German measles:		
Colorado.....	2		Colorado.....		12
Impetigo contagiosa:			Illinois.....		68
Hawaii Territory.....	7		Maryland.....		6
Leprosy:			Massachusetts.....		85
Hawaii Territory.....	5		New Jersey.....		207
Lethargic encephalitis:			New Mexico.....		6
Colorado.....	1		New York.....		331
Mumps:			North Carolina.....		19
Colorado.....	115		Ohio.....		17
Hawaii Territory.....	37		Pennsylvania.....		193
Tetanus:			Rhode Island.....		18
Colorado.....	1		Hookworm disease:		
Hawaii Territory.....	3		Louisiana.....		11
Trachoma:			Impetigo contagiosa:		
Hawaii Territory.....	434		Colorado.....		1
Whooping cough:			Maryland.....		4
Colorado.....	106		Lend poisoning:		
Hawaii Territory.....	7		Illinois.....		1
Actinomycosis:			New Jersey.....		4
Illinois.....	1		Ohio.....		27
Anthrax:			Leprosy:		
New York.....	2		Michigan.....		1
Pennsylvania.....	1		Lethargic encephalitis:		
Botulism:			Alabama.....		1
Colorado.....	3		Illinois.....		6
Chicken pox:			Louisiana.....		2
Alabama.....	331		Massachusetts.....		8
Colorado.....	361		Michigan.....		3
Illinois.....	2,180		Minnesota.....		1
Louisiana.....	67		New York.....		9
Maryland.....	452		Ohio.....		6
Massachusetts.....	1,697		Pennsylvania.....		2
Michigan.....	1,600		Mumps:		
Minnesota.....	758		Alabama.....		42
Missouri.....	306		Colorado.....		185
New Jersey.....	1,632		Illinois.....		655
New Mexico.....	114		Louisiana.....		12
New York.....	3,515		Maryland.....		84
North Carolina.....	1,088		Massachusetts.....		1,006
Ohio.....	2,475		Michigan.....		518
Oklahoma <sup>1</sup> .....	71		Missouri.....		91
Pennsylvania.....	4,065		Nevada.....		1
Rhode Island.....	128		New Mexico.....		132
West Virginia.....	216		New York.....		2,103
Conjunctivitis:			Ohio.....		582
New Mexico.....	3		Oklahoma <sup>1</sup> .....		84
Oklahoma <sup>1</sup> .....	3		Pennsylvania.....		1,305
Diarrhea:			Rhode Island.....		3
Maryland.....	2		West Virginia.....		8
Diarrhea and enteritis (under 2 years):			Ophthalmia neonatorum:		
Ohio.....	21		Illinois.....		63
			Maryland.....		2
			Massachusetts.....		134
			Missouri.....		3

<sup>1</sup> Exclusive of Oklahoma City and Tulsa.

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	Ophthalmia neonatorum—Continued.	Cases	Trachoma—Continued.	Cases
568 9 3 3 1 4 2	New Jersey.....	12	Maryland.....	5
12 68 6 83 207 6 331 19 17 103 18	New York.....	8	Missouri.....	18
3 3 1 4 2	North Carolina.....	2	New York.....	1
12 68 6 83 207 6 331 19 17 103 18	Ohio.....	130	Ohio.....	8
12 68 6 83 207 6 331 19 17 103 18	Oklahoma <sup>1</sup> .....	1	Oklahoma <sup>1</sup> .....	20
12 68 6 83 207 6 331 19 17 103 18	Pennsylvania.....	7	Trichinosis:	
12 68 6 83 207 6 331 19 17 103 18	Paratyphoid fever:		Maryland.....	1
12 68 6 83 207 6 331 19 17 103 18	Illinois.....	1	New Jersey.....	1
12 68 6 83 207 6 331 19 17 103 18	New Jersey.....	1	Tularaemia:	
12 68 6 83 207 6 331 19 17 103 18	New York.....	12	Alabama.....	2
12 68 6 83 207 6 331 19 17 103 18	Psittacosis:		Illinois.....	19
12 68 6 83 207 6 331 19 17 103 18	Illinois.....	2	Louisiana.....	1
12 68 6 83 207 6 331 19 17 103 18	Maryland.....	14	Maryland.....	6
12 68 6 83 207 6 331 19 17 103 18	Pennsylvania.....	3	Minnesota.....	1
12 68 6 83 207 6 331 19 17 103 18	Puerperal septicemia:		Missouri.....	4
12 68 6 83 207 6 331 19 17 103 18	Illinois.....	5	North Carolina.....	3
12 68 6 83 207 6 331 19 17 103 18	New York.....	8	Ohio.....	9
12 68 6 83 207 6 331 19 17 103 18	Ohio.....	12	Pennsylvania.....	3
12 68 6 83 207 6 331 19 17 103 18	Pennsylvania.....	11	Typhus fever:	
12 68 6 83 207 6 331 19 17 103 18	Rabies in animals:		Alabama.....	1
12 68 6 83 207 6 331 19 17 103 18	Illinois.....	3	Undulant fever:	
12 68 6 83 207 6 331 19 17 103 18	Louisiana.....	13	Alabama.....	1
12 68 6 83 207 6 331 19 17 103 18	Maryland.....	3	Illinois.....	2
12 68 6 83 207 6 331 19 17 103 18	Missouri.....	19	Maryland.....	2
12 68 6 83 207 6 331 19 17 103 18	New York <sup>1</sup> .....	18	Massachusetts.....	3
12 68 6 83 207 6 331 19 17 103 18	North Carolina.....	2	Minnesota.....	3
12 68 6 83 207 6 331 19 17 103 18	Rhode Island.....	5	Missouri.....	5
12 68 6 83 207 6 331 19 17 103 18	Rabies in man:		New Mexico.....	1
12 68 6 83 207 6 331 19 17 103 18	North Carolina.....	2	New York.....	9
12 68 6 83 207 6 331 19 17 103 18	Scabies:		Ohio.....	10
12 68 6 83 207 6 331 19 17 103 18	Maryland.....	5	Pennsylvania.....	1
12 68 6 83 207 6 331 19 17 103 18	Oklahoma.....	2	Vincent's angina:	
12 68 6 83 207 6 331 19 17 103 18	Septic sore throat:		Colorado.....	1
12 68 6 83 207 6 331 19 17 103 18	Illinois.....	15	Illinois.....	1
12 68 6 83 207 6 331 19 17 103 18	Louisiana.....	4	Maryland.....	6
12 68 6 83 207 6 331 19 17 103 18	Maryland.....	11	New York.....	87
12 68 6 83 207 6 331 19 17 103 18	Massachusetts.....	45	Whooping cough:	
12 68 6 83 207 6 331 19 17 103 18	Michigan.....	60	Alabama.....	231
12 68 6 83 207 6 331 19 17 103 18	Missouri.....	14	Colorado.....	66
12 68 6 83 207 6 331 19 17 103 18	New Mexico.....	1	Illinois.....	1,096
12 68 6 83 207 6 331 19 17 103 18	New York.....	31	Louisiana.....	21
12 68 6 83 207 6 331 19 17 103 18	North Carolina.....	11	Maryland.....	146
12 68 6 83 207 6 331 19 17 103 18	Ohio.....	52	Massachusetts.....	1,710
12 68 6 83 207 6 331 19 17 103 18	Oklahoma <sup>1</sup> .....	19	Michigan.....	820
12 68 6 83 207 6 331 19 17 103 18	Rhode Island.....	5	Minnesota.....	174
12 68 6 83 207 6 331 19 17 103 18	Tetanus:		Missouri.....	140
12 68 6 83 207 6 331 19 17 103 18	Illinois.....	5	New Jersey.....	789
12 68 6 83 207 6 331 19 17 103 18	Louisiana.....	1	New Mexico.....	20
12 68 6 83 207 6 331 19 17 103 18	Maryland.....	5	New York.....	2,171
12 68 6 83 207 6 331 19 17 103 18	Missouri.....	1	North Carolina.....	1,198
12 68 6 83 207 6 331 19 17 103 18	New York.....	5	Ohio.....	969
12 68 6 83 207 6 331 19 17 103 18	Pennsylvania.....	4	Oklahoma <sup>1</sup> .....	49
12 68 6 83 207 6 331 19 17 103 18	Trachoma:		Pennsylvania.....	1,726
12 68 6 83 207 6 331 19 17 103 18	Illinois.....	3	Rhode Island.....	105
12 68 6 83 207 6 331 19 17 103 18	Louisiana.....	2	West Virginia.....	230

<sup>1</sup> Exclusive of Oklahoma City and Tulsa.<sup>2</sup> Exclusive of New York City.

## GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,630,000. The estimated population of the 89 cities reporting deaths is more than 30,035,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

*Weeks ended February 15, 1930, and February 16, 1929*

	1930	1929	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
46 States.....	1,994	1,568	
96 cities.....	537	733	909
Measles:			
43 States.....	9,890	9,502	
96 cities.....	2,556	2,451	
Meningococcus meningitis:			
47 States.....	281	255	
96 cities.....	100	136	
Poliomyelitis:			
47 States.....	23	17	
Scarlet fever:			
46 States.....	5,142	5,230	
96 cities.....	1,891	1,672	1,590
Smallpox:			
46 States.....	1,615	979	
96 cities.....	164	48	63
Typhoid fever:			
46 States.....	187	119	
96 cities.....	33	30	28
<i>Deaths reported</i>			
Influenza and pneumonia:			
89 cities.....	1,116	1,543	
Smallpox:			
89 cities.....	0	0	

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*City reports for week ended February 15, 1930*

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1921 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chick-en pox, cases reported	Diphtheria		Influenza		Meas-les, cases re-por-ted	Mumps, cases re-por-ted	Pneu-monia, deaths re-por-ted
		Cases, es-ti-mated ex-pectancy	Cases, re-por-ted	Cases re-por-ted	Deaths re-por-ted			
<b>NEW ENGLAND</b>								
Maine:								
Portland	14	1	0	1	0	0	20	1
New Hampshire:								
Concord	0	1	0		0	0	0	2
Manchester	0	1	0		0	0	0	1
Nashua	1	0	0		0	0	0	0
Vermont:								
Barre	0	0	0		0	4	0	0
Burlington	2	0	1		0	0	0	0
Massachusetts:								
Boston	67	46	21	4	0	104	82	40
Fall River	10	4	4	1	1	2	0	1
Springfield	8	4	5	1	1	0	3	5
Worcester	7	3	1		0	82	0	1
Rhode Island:								
Pawtucket	10	1	0		0	0	0	0
Providence	2	9	8		0	0	0	10
Connecticut:								
Bridgeport	2	7	1	3	0	0	0	5
Hartford	8	7	3	1	0	1	1	8
New Haven	73	1	0	1	0	2	10	7
<b>MIDDLE ATLANTIC</b>								
New York:								
Buffalo	18	14	8		2	3	2	31
New York	208	225	91	42	12	167	142	217
Rochester	15	9	0	2	0	5	1	7
Syracuse	26	3	0		1	0	47	9
New Jersey:								
Camden	3	6	5	1	1	2	0	5
Newark	65	17	18	10	0	134	10	17
Trenton	11	2	2		0	26	0	8
Pennsylvania:								
Philadelphia	103	73	25	9	8	54	51	85
Pittsburgh	28	22	22	2	7	77	5	40
Reading	21	2	2		0	1	3	3
Scranton	4	4	3		0	1	0	0
<b>EAST NORTH CENTRAL</b>								
Ohio:								
Cincinnati	17	10	2		1	1	0	14
Cleveland	120	33	15	22	3	4	35	20
Columbus	8	4	0	3	3	16	0	8
Toledo	49	7	2	2	2	264	8	7
Indiana:								
Fort Wayne	5	3	1		0	0	0	3
Indianapolis	17	8	4		0	8	2	14
South Bend	11	1	0		0	0	0	2
Terre Haute	4	1	2		0	0	0	4
Illinois:								
Chicago	114	100	119	10	13	17	55	78
Springfield	11	1	0	6	3	0	3	2

## City reports for week ended February 15, 1930—Continued

Division, State, and city	Chick-en pox, cases re- ported	Diphtheria		Influenza		Meas- sles, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
		Cases, esti- mated expectancy	Cases, re- ported	Cases re- ported	Deaths re- ported			
<b>EAST NORTH CENTRAL—CON.</b>								
Michigan:								
Detroit	53	53	39	13	3	315	27	40
Flint	14	3	1		0	5	0	4
Grand Rapids	8	2	0		1	1	1	2
Wisconsin:								
Kenosha	5	1	0		0	0	1	0
Madison	7	0	0			90	1	
Milwaukee	195	19	0	1	1	23	46	11
Racine	3	3	0		0	1	2	2
Superior	0	0	0		0	13	0	2
<b>WEST NORTH CENTRAL</b>								
Minnesota:								
Duluth	2	0	0		0	64	1	2
Minneapolis	41	17	1		0	22	19	7
St. Paul	25	9	1		2	7	11	7
Iowa:								
Davenport	0	0	0			0	2	
Des Moines	0	3	2			0	0	
Sioux City	9	1	0			2	0	
Waterloo	14	1	2			176	0	
Missouri:								
Kansas City	0	6	0		1	4	2	11
St. Joseph	1	2	1		0	1	0	3
St. Louis	23	46	32	1		2	27	
North Dakota:								
Fargo	6	1	0		0	0	6	1
Grand Forks	1	0	0			0	0	
South Dakota:								
Aberdeen	6	0	0			0	1	
Nebraska:								
Omaha	12	4	17		0	56	1	0
Kansas:								
Topeka	18	2	1	1	1	79	6	2
Wichita	23	4	0		0	5	0	4
<b>SOUTH ATLANTIC</b>								
Delaware:								
Wilmington	2	2	1		0	0	0	6
Maryland:								
Baltimore	120	28	17	26	2	6	7	30
Cumberland	0	0	0		1	0	0	1
Frederick	0	1	0		0	0	0	1
District of Columbia:								
Washington	19	21	14	1	0	9	0	18
Virginia:								
Lynchburg	9	1	2		1	122	12	3
Norfolk	5	2	5		0	2	23	5
Richmond	7	4	6		3	0	1	5
Roanoke	0	1	4		0	5	1	5
West Virginia:								
Charleston	15	0	0		0	3	0	0
Wheeling	1	1	0		0	1	0	1
North Carolina:								
Raleigh	2	1	0		0	0	0	3
Wilmington	5	0	0		0	1	0	2
Winston-Salem	10	1	2	3	1	1	17	5
South Carolina:								
Charleston	3	0	0	31	1	0	0	1
Columbia	11	1	0		0	0	6	4
Georgia:								
Atlanta	8	3	2	43	5	5	15	13
Brunswick	0	1	0		0	0	3	1
Savannah	0	0	0	2	2	0	0	4
Florida:								
Miami	7	1	4		0	1	1	2
St. Petersburg	0	0	0		0	0	0	1
Tampa	10	2	3		0	14	6	1

March 7, 1930

*City reports for week ended February 15, 1930—Continued*

Division, State, and city	Chick-en pox, cases re- ported	Diphtheria		Influenza		Meas- sles, cases re- ported	Mump-s, cases re- ported	Pneu- monia, deaths re- ported
		Cases, esti- mated expect- ancy	Cases, re- ported	Cases re- ported	Deaths re- ported			
<b>EAST SOUTH CENTRAL</b>								
Kentucky:								
Covington.....	1	1	2	—	0	0	0	2
Tennessee:								
Memphis.....	11	3	0	—	5	—	28	8
Nashville.....	1	1	1	—	1	0	0	13
Alabama:								
Birmingham.....	3	—	—	—	—	—	—	—
Mobile.....	1	1	2	3	0	3	0	1
Montgomery.....	28	1	1	—	—	34	0	—
<b>WEST SOUTH CENTRAL</b>								
Arkansas:								
Fort Smith.....	0	0	0	—	—	1	0	—
Little Rock.....	4	1	0	—	0	0	1	5
Louisiana:								
New Orleans.....	1	13	12	8	9	70	0	22
Shreveport.....	3	0	0	—	0	0	6	9
Oklahoma:								
Oklahoma City.....	1	3	1	3	3	2	0	6
Tulsa.....	11	1	5	—	—	181	0	—
Texas:								
Dallas.....	10	6	13	2	1	127	3	10
Fort Worth.....	26	2	2	—	0	0	0	0
Galveston.....	1	1	0	—	0	0	0	3
Houston.....	4	5	8	—	0	0	1	13
San Antonio.....	1	3	6	1	9	1	0	10
<b>MOUNTAIN</b>								
Montana:								
Billings.....	0	0	0	—	0	0	0	1
Great Falls.....	1	1	0	—	0	0	20	0
Helena.....	0	0	0	—	0	0	31	0
Missoula.....	0	1	0	—	0	1	0	2
Idaho:								
Boise.....	0	0	0	—	0	0	0	2
Colorado:								
Denver.....	12	—	—	—	—	—	—	—
Pueblo.....	6	1	0	—	0	0	29	2
New Mexico:								
Albuquerque.....	5	0	2	—	0	0	4	1
Arizona:								
Phoenix.....	2	0	2	—	0	1	3	3
Utah:								
Salt Lake City.....	20	3	0	—	1	52	16	3
Nevada:								
Reno.....	0	0	0	—	0	0	0	1
<b>PACIFIC</b>								
Washington:								
Seattle.....	47	5	2	—	—	59	67	—
Spokane.....	19	3	2	3	—	0	0	—
Tacoma.....	24	1	2	—	0	1	0	2
Oregon:								
Portland.....	18	8	6	4	1	2	15	10
Salem.....	5	0	0	1	—	1	12	—
California:								
Los Angeles.....	94	41	13	40	4	84	34	26
Sacramento.....	4	2	0	—	0	3	39	4
San Francisco.....	47	16	18	2	3	467	81	11

## City reports for week ended February 15, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox		Tuber- culosis, deaths re- ported	Typhoid fever		Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported	
<b>NEW ENGLAND</b>									
Maine:									
Portland	3	6	0	0	0	1	0	0	0
New Hampshire:									
Concord	0	0	0	0	0	0	0	0	11
Manchester	3	0	0	0	0	1	0	0	18
Nashua	1	1	0	0	0	0	0	0	0
Vermont:									
Barre	0	0	0	3	0	2	0	0	1
Burlington	1	0	0	0	0	0	0	0	2
Massachusetts:									
Boston	84	78	0	0	0	12	1	0	70
Fall River	4	2	0	0	0	3	0	0	15
Springfield	10	4	0	0	0	0	0	0	21
Worcester	10	10	0	0	0	1	0	1	75
Rhode Island:									
Pawtucket	2	1	0	0	0	0	0	0	11
Providence	12	19	0	0	0	2	0	0	32
Connecticut:									
Bridgeport	14	15	0	0	0	4	0	0	42
Hartford	5	7	0	0	0	3	0	0	55
New Haven	11	16	0	0	0	0	0	0	39
<b>MIDDLE ATLANTIC</b>									
New York:									
Buffalo	30	30	0	0	0	6	1	0	8
New York	343	226	0	0	0	100	7	11	54
Rochester	11	18	0	0	0	2	0	0	4
Syracuse	15	30	0	0	0	0	0	0	30
New Jersey:									
Camden	7	6	0	0	0	1	1	0	1
Newark	38	49	0	0	0	8	1	0	20
Trenton	6	12	0	0	0	5	0	1	3
Pennsylvania:									
Philadelphia	103	118	0	0	0	33	2	0	33
Pittsburgh	41	24	0	0	0	11	0	1	43
Reading	7	2	0	0	0	0	0	0	25
Scranton	4	4	0	0	0	0	0	0	1
<b>EAST NORTH CENTRAL</b>									
Ohio:									
Cincinnati	21	35	1	0	0	7	0	0	7
Cleveland	50	75	1	0	0	18	1	1	46
Columbus	11	8	1	8	0	8	0	0	4
Toledo	13	3	0	2	0	10	0	1	2
Indiana:									
Fort Wayne	5	4	0	11	0	0	0	2	2
Indianapolis	13	27	8	4	0	6	0	0	4
South Bend	3	9	1	1	0	1	0	0	0
Terre Haute	3	1	0	1	0	0	0	0	0
Illinois:									
Chicago	137	304	3	2	0	45	3	0	66
Springfield	4	0	0	2	0	0	1	0	3
Michigan:									
Detroit	113	140	2	11	0	25	0	1	71
Flint	14	20	0	12	0	4	1	0	9
Grand Rapids	13	16	0	0	0	0	0	0	4
Wisconsin:									
Kenosha	2	13	1	0	0	0	0	0	4
Madison	5	6	0	1	0	0	0	0	20
Milwaukee	40	38	1	1	0	11	0	1	8
Racine	5	5	0	0	0	1	0	0	17
Superior	4	4	0	0	0	0	0	0	10
<b>WEST NORTH CENTRAL</b>									
Minnesota:									
Duluth	10	1	0	2	0	0	0	0	4
Minneapolis	59	15	4	0	0	2	0	1	11
St. Paul	36	23	1	0	0	5	0	0	60

## City reports for week ended February 15, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
<b>WEST NORTH CENTRAL—continued</b>											
Iowa:											
Davenport	2	0	1	26			0	0		0	
Des Moines	9	18	2	4			0	0		0	31
Sioux City	1	6	0	1			0	0		3	
Waterloo	2	0	1	12			0	0		0	
Missouri:											
Kansas City	18	41	2	0	0	10	0	1	0	7	111
St. Joseph	3	2	0	1	0	2	0	0	0	0	
St. Louis	47	44	2	4	0	12	1	2	0	19	265
North Dakota:											
Fargo	2	2	0	0	0	0	0	0	0	7	2
Grand Forks	1	4	0	2			0	0		0	
South Dakota:											
Aberdeen	2	0	0	1			0	0		2	
Nebraska:											
Omaha	5	6	2	2	0	0	0	1	0	1	59
Kansas:											
Topeka	2	4	1	2	0	1	0	0	0	11	16
Wichita	6	27	1	1	0	1	0	0	0	15	35
<b>SOUTH ATLANTIC</b>											
Delaware:											
Wilmington	5	8	0	0	0	2	0	0	0	3	48
Maryland:											
Baltimore	35	55	0	0	0	16	1	2	0	11	238
Cumberland	1	1	0	0	0	0	0	0	0	0	13
Frederick	0	0	0	0	0	0	0	0	0	0	3
District of Columbia:											
Washington	26	22	1	0	0	11	1	0	0	14	140
Virginia:											
Lynchburg	0	2	0	0	0	0	0	0	0	2	13
Norfolk	3	4	0	0	0	1	0	0	0	6	
Richmond	4	10	0	0	0	4	0	0	0	0	55
Roanoke	1	2	0	0	0	0	0	0	0	0	27
West Virginia:											
Charleston	2	1	0	1	0	1	0	1	0	8	9
Wheeling	2	0	0	0	0	1	0	0	0	1	22
North Carolina:											
Raleigh	1	1	0	2	0	1	0	0	0	0	33
Wilmington	0	0	0	0	0	0	0	0	0	3	11
Winston-Salem	1	5	0	0	0	2	0	0	0	8	21
South Carolina:											
Charleston	1	0	0	0	0	1	0	0	0	4	25
Columbia	0	0	0	0	0	0	0	0	0	19	13
Georgia:											
Atlanta	5	16	4	0	0	14	0	1	0	0	109
Brunswick	0	0	0	0	0	0	0	0	0	0	5
Savannah	1	0	0	0	0	3	0	0	0	0	29
Florida:											
Miami	3	0	0	0	0	0	0	1	0	1	35
St. Petersburg	0	0	0	0	0	0	0	0	0	0	19
Tampa	0	3	0	0	0	1	1	0	0	0	24
<b>EAST SOUTH CENTRAL</b>											
Kentucky:											
Covington	2	6	0	4	0	0	0	0	0	0	15
Tennessee:											
Memphis	7	12	1	0	0	3	0	0	0	7	101
Nashville	3	—	0	0	0	4	0	1	2	2	46
Alabama:											
Birmingham	2	—	4	—	—	—	—	—	—	—	—
Mobile	0	0	0	0	0	5	0	0	0	1	26
Montgomery	1	5	1	0	—	—	0	0	2	—	—
<b>WEST SOUTH CENTRAL</b>											
Arkansas:											
Fort Smith	1	1	0	0	—	—	0	0	—	0	—
Little Rock	2	1	0	0	0	2	0	0	0	0	—
Louisiana:											
New Orleans	7	10	0	0	0	12	3	1	0	0	181
Shreveport	0	0	0	6	0	0	0	0	0	0	38

## City reports for week ended February 15, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber-cu-losis, deaths re-ported	Typhoid fever			Whoop-ing cough, cases re-ported	Deaths, all causes
	Cases, es-ti-mated ex-pectancy	Cases re-ported	Cases, es-ti-mated ex-pectancy	Cases re-ported	Deaths re-ported		Cases, es-ti-mated ex-pectancy	Cases re-ported	Deaths re-ported		
<b>WEST SOUTH CENTRAL—continued</b>											
Oklahoma:											
Oklahoma City	2	5	2	10	0	1	0	0	0	0	45
Tulsa	2	2	1	5			0	0		15	
Texas:											
Dallas	4	12	3	6	0	5	0	0	0	3	65
Fort Worth	1	8	3	0	0	0	0	0	0	0	
Galveston	0	0	0	0	0	0	0	0	0	0	14
Houston	2	5	3	8	0	1	0	1	0	0	72
San Antonio	2	2	0	8	0	8	0	0	0	0	79
<b>MOUNTAIN</b>											
Montana:											
Billings	0	2	1	0	0	0	0	0	0	0	8
Great Falls	2	20	0	0	0	0	0	0	0	0	6
Helena	0	0	0	0	0	0	0	0	0	1	1
Missoula	0	0	0	2	0	0	0	0	0	0	4
Idaho:											
Boise	1	5	1	0	0	0	0	0	0	2	8
Colorado:											
Denver	13	0	0	1	0	0	0	0	0	1	15
Pueblo	1	0	0	1	0	0	0	0	0	0	
New Mexico:											
Albuquerque	1	1	0	0	0	4	0	1	0	0	12
Arizona:											
Phoenix	1	7	0	1	0	3	0	0	0	0	14
Utah:											
Salt Lake City	3	5	1	1	0	0	0	0	1	34	38
Nevada:											
Reno	0	3	0	0	0	0	0	0	0	0	3
<b>PACIFIC</b>											
Washington:											
Seattle	11	34	3	5			1	0		6	
Spokane	7	0	9	22			0			21	
Tacoma	2	7	3	10	0	0	0	0	0	5	31
Oregon:											
Portland	7	3	15	8	0	3	0	1	0	8	94
Salem	0	0	1	1	0	0	0	0	0	0	
California:											
Los Angeles	40	46	2	2	0	30	1	0	0	20	25
Sacramento	2	5	0	2	0	3	0	0	0	0	22
San Francisco	22	41	1	3	0	9	0	2	0	1	171

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, es-ti-mated ex-pectancy	Cases	Deaths
<b>NEW ENGLAND</b>									
Massachusetts:									
Boston	2	0	1	0	0	0	0	0	0
Springfield	1	0	0	0	0	0	0	0	0
Rhode Island:									
Providence	0	1	1	0	0	0	0	0	0
<b>MIDDLE ATLANTIC</b>									
New York:									
New York	14	7	1	0	0	0	1	0	0
Rochester	0	0	0	0	0	0	1	0	0
Syracuse	1	0	0	0	0	0	0	0	0
New Jersey:									
Newark	2	0	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	3	3	1	0	0	0	0	0	0
Pittsburgh	0	1	0	0	0	0	0	0	0

March 7, 1930

*City reports for week ended February 15, 1930—Continued*

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomylitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
<b>EAST NORTH CENTRAL</b>									
Ohio:									
Cincinnati	3	1	0	0	0	0	0	0	0
Cleveland	3	2	2	1	0	0	0	0	0
Indiana:									
Indianapolis	9	0	0	0	0	0	0	0	0
South Bend	1	0	0	0	0	0	0	0	0
Illinois:									
Chicago	5	6	0	0	0	0	1	3	0
Springfield	1	0	0	0	0	0	0	0	0
Michigan:									
Detroit	11	6	0	0	1	1	0	0	0
Flint	1	0	0	0	0	0	0	0	0
Grand Rapids	1	1	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	1	2	0	0	0	0	0	0	0
<b>WEST NORTH CENTRAL</b>									
Minnesota:									
Minneapolis	1	0	0	0	0	0	0	0	0
St. Paul	0	0	1	0	0	0	0	0	0
Missouri:									
Kansas City	11	7	0	0	0	0	0	0	0
St. Louis	6	4	0	0	0	0	0	0	0
Nebraska:									
Omaha	1	0	0	0	0	0	0	0	0
<b>SOUTH ATLANTIC</b>									
Maryland:									
Baltimore	0	0	0	1	0	0	0	0	0
District of Columbia:									
Washington	1	1	1	1	0	0	0	1	0
Virginia:									
Richmond	0	1	0	0	0	0	0	0	0
North Carolina:									
Raleigh	0	0	0	0	0	2	0	0	0
Winston-Salem	0	0	0	0	2	0	0	0	0
South Carolina:									
Charleston	0	0	0	0	3	0	0	0	0
Columbia	1	0	0	0	9	1	0	0	0
Georgia:									
Atlanta	8	3	0	0	1	1	0	0	0
Florida:									
Miami <sup>1</sup>	0	0	0	0	0	1	0	0	0
St. Petersburg	0	0	0	1	0	0	0	0	0
<b>EAST SOUTH CENTRAL</b>									
Tennessee:									
Memphis	2	8	0	0	0	0	0	0	0
Alabama:									
Mobile	1	1	0	0	0	0	0	0	0
<b>WEST SOUTH CENTRAL</b>									
Louisiana:									
New Orleans	1	1	0	0	0	0	0	0	0
Shreveport	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	1	0	0	0	0	0
Tulsa	1	0	0	0	0	0	0	0	0
Texas:									
Galveston	0	0	0	0	0	1	0	0	0
<b>MOUNTAIN</b>									
New Mexico:									
Albuquerque	0	1	0	0	0	0	0	0	0
Utah:									
Salt Lake City	1	0	0	0	0	0	0	0	0
<b>PACIFIC</b>									
Washington:									
Seattle	2	0	0	0	0	0	0	0	0
Spokane	2	0	0	0	0	0	0	0	0
California:									
Los Angeles	1	2	0	1	0	0	0	0	0
Sacramento	1	1	0	0	0	0	0	0	0
San Francisco	1	1	0	0	0	0	0	0	0

<sup>1</sup> Typhus fever; 1 case at Miami, Fla.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended February 15, 1930, compared with those for a like period ended February 16, 1929. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have an estimated aggregate population of more than 32,000,000. The 91 cities reporting deaths have more than 30,500,000 estimated population.

*Summary of weekly reports from cities, January 12 to February 15, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929<sup>1</sup>*

#### DIPHTHERIA CASE RATES

	Week ended—									
	Jan. 18, 1930	Jan. 19, 1929	Jan. 25, 1930	Jan. 26, 1929	Feb. 1, 1930	Feb. 2, 1929	Feb. 8, 1930	Feb. 9, 1929	Feb. 15, 1930	Feb. 16, 1929
98 cities.....	110	132	114	125	115	109	95	117	97	121
New England.....	122	177	146	200	128	108	112	117	95	130
Middle Atlantic.....	94	158	96	136	103	97	141	83	147	
East North Central.....	127	107	145	122	140	106	103	113	115	115
West North Central.....	108	146	82	115	47	90	94	146	104	150
South Atlantic.....	103	99	106	79	106	107	70	67	93	73
East South Central.....	67	171	74	137	94	68	81	82	118	82
West South Central.....	205	76	157	114	232	95	168	114	146	114
Mountain.....	51	61	51	52	34	70	34	78	30	44
Pacific.....	94	104	92	92	128	65	43	68	87	77

#### MEASLES CASE RATES

98 cities.....	208	218	227	261	221	274	329	252	421	404
New England.....	157	700	210	667	323	514	305	561	432	541
Middle Atlantic.....	124	70	117	86	160	93	186	129	224	114
East North Central.....	152	303	137	381	168	418	172	66	253	761
West North Central.....	364	423	457	627	604	770	695	1,193	793	983
South Atlantic.....	167	84	157	84	287	103	245	133	306	135
East South Central.....	40	34	27	27	61	7	81	14	357	41
West South Central.....	400	11	624	34	314	34	605	34	743	59
Mountain.....	240	853	377	871	462	697	479	1,341	908	1,019
Pacific.....	676	56	730	75	124	99	1,200	135	1,450	164

#### SCARLET FEVER CASE RATES

98 cities.....	278	225	295	230	305	232	327	246	312	277
New England.....	363	294	419	317	321	303	479	305	350	373
Middle Atlantic.....	223	183	239	217	252	190	274	186	246	222
East North Central.....	308	258	379	262	420	280	432	318	438	340
West North Central.....	260	248	307	296	346	306	332	312	324	360
South Atlantic.....	198	122	176	114	205	131	203	146	231	157
East South Central.....	101	232	169	232	162	157	216	246	222	260
West South Central.....	134	183	105	90	78	145	138	232	116	255
Mountain.....	335	183	479	104	616	61	411	113	599	87
Pacific.....	276	377	402	258	367	350	338	304	314	328

<sup>1</sup> The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1930 and 1929, respectively.

<sup>a</sup> South Bend, Ind., not included.

<sup>b</sup> Denver, Colo., not included.

<sup>c</sup> Portland, Me., Buffalo, N. Y., St. Louis, Mo., Denver, Colo., and San Francisco, Calif., not included.

<sup>d</sup> Portland, Me., Kansas City, Mo., and Denver, Colo., not included.

<sup>e</sup> Birmingham, Ala., and Denver, Colo., not included.

<sup>f</sup> Portland, Me., not included.

<sup>g</sup> Buffalo, N. Y., not included.

<sup>h</sup> St. Louis, Mo., not included.

<sup>i</sup> Kansas City, Mo., not included.

<sup>j</sup> Birmingham, Ala., not included.

<sup>k</sup> San Francisco, Calif., not included.

March 7, 1930

*Summary of weekly reports from cities, January 12 to February 15, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued*

## SMALLPOX CASE RATES

	Week ended—									
	Jan. 18, 1930	Jan. 19, 1929	Jan. 25, 1930	Jan. 26, 1929	Feb. 1, 1930	Feb. 2, 1929	Feb. 8, 1930	Feb. 9, 1929	Feb. 15, 1930	Feb. 16, 1929
98 cities.....	33	7	26	8	33	7	30	5	27	8
New England.....	0	0	4	0	0	0	2	0	7	0
Middle Atlantic.....	0	0	1	0	0	0	0	0	0	0
East North Central.....	36	6	19	8	39	10	34	8	23	15
West North Central.....	121	13	70	2	53	8	60	2	47	0
South Atlantic.....	5	6	2	7	5	11	4	0	5	2
East South Central.....	0	7	0	14	13	7	0	0	39	0
West South Central.....	41	46	37	46	78	27	101	50	105	23
Mountain.....	51	17	34	61	86	78	34	26	68	70
Pacific.....	144	17	177	19	1244	7	146	7	104	24

## TYPHOID FEVER CASE RATES

98 cities.....	6	14	14	4	15	4	14	5	15	5
New England.....	4	4	0	2	70	2	70	2	2	4
Middle Atlantic.....	3	4	5	2	5	4	3	4	6	4
East North Central.....	3	3	3	4	3	1	5	3	3	2
West North Central.....	11	2	2	4	6	6	12	2	9	12
South Atlantic.....	5	6	7	2	7	7	11	6	7	6
East South Central.....	13	21	20	7	7	0	20	7	10	14
West South Central.....	7	8	4	23	4	8	7	27	7	11
Mountain.....	60	0	17	0	17	0	10	9	10	0
Pacific.....	5	2	2	10	12	7	2	7	5	7

## INFLUENZA DEATH RATES

91 cities.....	19	183	22	131	18	84	14	58	20	54
New England.....	9	141	9	204	72	141	75	90	4	56
Middle Atlantic.....	15	152	14	134	16	83	11	58	15	44
East North Central.....	17	148	17	70	13	48	13	28	18	36
West North Central.....	27	123	18	69	18	45	19	51	12	38
South Atlantic.....	22	288	31	182	11	114	11	92	29	60
East South Central.....	44	948	59	619	59	206	37	127	66	224
West South Central.....	66	320	111	199	88	168	54	102	73	152
Mountain.....	26	157	0	70	17	35	17	78	17	87
Pacific.....	15	75	18	44	15	41	9	41	21	41

## PNEUMONIA DEATH RATES

91 cities.....	155	366	142	327	171	273	176	230	174	222
New England.....	115	442	126	465	181	507	181	384	177	303
Middle Atlantic.....	167	446	135	454	165	360	190	256	202	254
East North Central.....	109	280	111	184	129	170	139	133	129	183
West North Central.....	207	241	148	160	160	189	146	186	109	180
South Atlantic.....	170	474	196	388	218	268	198	240	196	243
East South Central.....	162	455	221	358	272	209	236	194	263	164
West South Central.....	237	383	310	297	314	191	291	191	276	211
Mountain.....	249	200	171	157	205	148	274	235	188	244
Pacific.....	169	119	95	128	167	113	160	129	132	123

<sup>2</sup> South Bend, Ind., not included.<sup>3</sup> Denver, Colo., not included.<sup>4</sup> Portland, Me., Buffalo, N. Y., St. Louis, Mo., Denver, Colo., and San Francisco, Calif., not included.<sup>5</sup> Portland, Me., Kansas City, Mo., and Denver, Colo., not included.<sup>6</sup> Birmingham, Ala., and Denver, Colo., not included.<sup>7</sup> Portland, Me., not included.<sup>8</sup> Buffalo, N. Y., not included.<sup>9</sup> St. Louis, Mo., not included.<sup>10</sup> Kansas City, Mo., not included.<sup>11</sup> Birmingham, Ala., not included.<sup>12</sup> San Francisco, Calif., not included.<sup>13</sup> Portland, Me., Buffalo, N. Y., Denver, Colo., and San Francisco, Calif., not included.

## FOREIGN AND INSULAR

### CANADA

*Provinces—Communicable diseases—Week ended February 8, 1930.*—The Department of Pensions and National Health reports cases of certain communicable diseases from eight Provinces of Canada for the week ended February 8, 1930, as follows:

Province	Cerebro-spinal fever	Influenza	Poliomyelitis	Small-pox	Typhoid fever
Prince Edward Island <sup>1</sup> .....					
Nova Scotia <sup>1</sup> .....					
Quebec.....	1		2		5
Ontario.....	1	20		12	2
Manitoba.....	1			3	1
Saskatchewan.....			1	22	
Alberta.....				8	1
British Columbia.....	1			3	5
Total.....	4	20	3	48	14

<sup>1</sup> No case of any disease included in the table was reported during the week.

*Quebec Province—Communicable diseases—Week ended February 15, 1930.*—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended February 15, 1930, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	76	Poliomyelitis.....	1
Diphtheria.....	45	Puerperal fever.....	3
German measles.....	12	Scarlet fever.....	103
Influenza.....	6	Tuberculosis.....	45
Measles.....	212	Typhoid fever.....	10
Mumps.....	142	Whooping cough.....	121

### CHINA

*Meningitis.*—During the week ended February 15, 1930, 8 cases of meningitis were reported in Shanghai, China.

### DENMARK

*Communicable diseases—December, 1929.*—During the month of December, 1929, cases of communicable diseases were reported in Denmark as follows:

Disease	Cases	Disease	Cases
Broncho-pneumonia.....	1,567	Paratyphoid fever.....	6
Cerebrospinal meningitis.....	8	Pneumonia.....	292
Chicken pox.....	72	Poliomyelitis.....	13
Diphtheria and croup.....	619	Puerperal fever.....	8
Erysipelas.....	263	Scabies.....	806
German measles.....	9	Scarlet fever.....	163
Influenza.....	3,084	Tetanus.....	2
Jaundice.....	185	Tuberculosis.....	169
Lethargic encephalitis.....	11	Typhoid fever.....	3
Measles.....	588	Undulant fever <sup>1</sup> .....	37
Mumps.....	1,683	Whooping cough.....	825

<sup>1</sup> Reported from the State Serum Institute.

## MEXICO

*Meningitis.*—According to recent information, an epidemic of cerebrospinal meningitis is prevailing in northern Sonora. Cases to February 20, 1930, were reported in the following districts: Cananea 7, Hermosillo 4, Nogales 1, El Plomo 10, Cumbas 6, Sahuarita 9. Seven deaths had been reported. The State Government of Sonora has sent physicians and medicine to outlying regions to combat the disease.

## TRINIDAD (BRITISH WEST INDIES)

*Port of Spain—Vital statistics (comparative)—January, 1930.*—The following statistics for the month of January for the years 1926 to 1930 are taken from a report issued by the Public Health Department of Port of Spain, Trinidad:

*January*

	1926	1927	1928	1929	1930
Number of births.....	164	154	159	177	157
Birth rate per 1,000 population.....	30.2	27.9	28.8	31.9	27.8
Number of deaths.....	140	126	141	119	135
Death rate per 1,000 population.....	25.8	22.8	25.5	21.4	23.9
Deaths under 1 year.....	28	22	26	16	35
Infant mortality rate per 1,000 births.....	170.7	141.6	157.0	90.4	222.9

## VIRGIN ISLANDS

*Communicable diseases—January, 1930.*—During the month of January, 1930, cases of certain communicable diseases were reported in the Virgin Islands, as follows:

St. Thomas and St. John:	Cases	St. Croix:	Cases
Gonorrhea.....	2	Chicken pox.....	1
Malaria.....	1	Gonorrhea.....	3
Syphilis.....	9	Syphilis.....	2
Tuberculosis (chronic pulmonary).....	1		

**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER**

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

**CHOLERA**

[C indicates cases; D, deaths; P, present]

Place	July 28, Aug. 24, 1929	Aug. 25, Sept. 21, 1929	Sept. 22, Oct. 19, 1929	Oct. 20- Nov. 16, 1929	Week ended—							
					November, 1929	December, 1929	January, 1930	February, 1930	1	2	3	
China:												
Anany	C 1				1	1						
Canton	C 5	1										
D 3	1											
Henkow	C 1		4	2								
Manchuria—												
Kwangtung—Dairen	C 1											
Nanking—	C 1											
Shanghai	C P			P								
D 36	684		36									
D 98	69	11										
D 12	37	22	12	1	1							
Swatoe—	C 1											
Tientsin	C 1											
Chosen: Chemnipo	C 1											
India:												
Bassein	C 11,060	26,896	16,334	17,330	4,330	5,237	4,937	5,032	4,619			
Bombyay	D 24,005	16,667	10,691	10,680	2,458	3,158	2,491	2,786	2,602			
Bombyay	D 6											
Caleutta	C 2		1									
D 1												
D 170	135	160	232	85	15	60	65	40	38	15	45	41
D 100	56	70	120	45	29	40	28	27	9	26	28	21
D 10	11											
Karachi	C 1											
Madras	C 1											
Neopatam	C 1											
Rangoon	C 1											
Tuticorin	C 1											
D 11	18	5	7	9	7	9	7	6	2	1	3	1



CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE

[IC indicates cases; D, deaths; P, present.]

15 of these cases were in the city of São Paulo.

CHOLERA, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

**PLAQUE**—Continued  
[C indicates cases; D, deaths; P, present]

March 7, 1930

Place	Au- gust, 1929	Sep- tem- ber, 1929	No- vem- ber, 1929	De- cem- ber, 1929	Janu- ary, 1930	Place	Au- gust, 1929	Sep- tem- ber, 1929	No- vem- ber, 1929	De- cem- ber, 1929	Janu- ary, 1930	
<b>Turkey: Adalia.</b>												
Union of Socialist Soviet Republics:	C	1										
Caucasia.....J.	C	2										
Karska	D	1										
Urni-Kirhiz.	C		1									
Union of South Africa:												
Cape Province.....	C			17	13	4						
Orange Free State.....	D		13	5	7	1						
On vessel:				1	7	6						
S. S. Chaban, at Port Said, from Jaffa.....	D			4	3	1						
Steamship at Porto Novo, from Lagos.	C	1										
At Rio de Janeiro, Brazil, from Argentina.....	D	1										
<b>British East Africa (see also table above):</b>												
Kenya-Uganda.....	C	19	26	146	157	15						
	C	865		170	105							
	D	740		164	94							
Ecuador: Guayaquil.....	C	6	7	12	14	17						
	D	1	3	4	3	6						
Plague-infected rats-Greece (see also table above).....	C	4	8	5	9	13						
	C	2	5	5	3	1						
Indo-China (see also table above).....	D	1	2	2	1							
Madagascar (see also table above).....	C	9				10	4					
Ambositra Province.....	C	48	195	203	182							
	D	46	182	163	163							
Antsiranana Province.....	C	9	9	2	42							
	D	9	9	2	33							
Italy Province.....	C	1	13	17	5							
	D	1	13	17	5							
Madagascar Province.....	C	2			10							
	D	2			10							
Miarinavato.....	C	11	11	12	5							
	D	11	11	5								
<b>Madagascar—Continued.</b>												
Moramanga Province.....	C											
Tamatave Province.....	C											
Tanzanarive Province.....	D											
Peru.....	C											
Senegal-Bao1.....	D											
Dakar 1.....	C											
Louga 1.....	C											
Rufisque 1.....	D											
Thies 1.....	D											
Tivaouane 1.....	C											
	D											

1 Incomplete reports.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX

[IC indicates illness; D, deaths; P, present]



## CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

## SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place	Week ended—												
	January, 1930					February, 1930							
	July 28- Aug. 25, 1929	Sept. 22- Sept. 24, 1929	Oct. 29- Oct. 31, 1929	Nov. 17- Nov. 19, 1929	December, 1929	21	22	4	11	18	25	1	8
Great Britain:													
England and Wales—													
Ashington under Lyne	C	502	406	643	904	195	222	248	335	414	313	354	374
Bradford	C	3	8	2	1	0	3	2	2	2	1	1	4
Cardiff	C	1	1	6	13	20	4	2	1	1	1	1	1
Leeds	C	1	2	1	1	1	1	1	1	1	1	1	1
London	C	78	144	156	174	321	90	83	120	169	158	127	157
London and Great Towns—	D	297	304	322	442	783	150	180	186	274	298	239	283
Newcastle-on-Tyne	C	4	2	1	1	1	1	1	1	1	1	1	1
Nottingham	C	18	16	7	9	1	1	2	10	3	3	6	3
Greece: Patras	C	11	22	5	7	6	1	1	4	7	11	11	11
Hedjaz	C	10	7	1	6	1	1	1	1	7	1	1	1
Honduras: Choluteca	C	6,481	4,190	3,111	3,387	7,044	2,723	—	—	—	—	—	—
India	C	1,415	954	601	780	1,963	775	—	—	—	—	—	—
Bombay	C	65	37	16	12	42	19	29	46	85	74	86	97
Calcutta	C	31	24	11	8	14	11	12	15	19	33	26	60
Cochin	C	31	21	12	6	54	7	18	29	34	41	36	65
Cochin	D	20	16	11	4	39	5	13	24	20	28	28	40
Karachi	C	4	13	13	6	387	67	71	51	47	58	61	57
Madras	D	16	27	10	11	72	6	4	3	7	6	5	5
Moulmein	D	7	16	3	2	1	2	4	2	2	2	2	2
Nepartam	D	89	82	70	68	64	27	25	10	23	10	22	34
Rangoon	D	11	6	3	11	7	5	2	2	3	3	3	6
—	D	5	3	2	3	6	3	1	8	5	3	18	20
—	D	1	3	1	1	1	1	1	4	1	2	8	6

Rangoon	C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tuticorin	D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vizagapatam	C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India (French): Kashmir	C	12	14	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Poonaiberry Province	D	2	13	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India (Portuguese)	D	12	8	5	19	7	2	7	6	6	6	6	6	6	6	6	6	6	6	6
Indo-China (see also table below): Phnompenh	D	7	8	3	16	7	1	7	6	6	6	6	6	6	6	6	6	6	6	6
Saigon and Cholon	C	3	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Iraq: Babylonia	D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Batra	D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Divyallah Liva	C	13	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kirkuk Liva	D	12	21	16	18	18	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Mosoul	D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ivory Coast (see table below). Mexico (see also table below): Acapulco	D	81	98	24	132	48	53	27	27	27	27	27	27	27	27	27	27	27	27	27
Aguascalientes	D	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Oaxaca	D	7	6	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jalisco (State): Guadalajara	D	6	8	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Juarez	D	3	P	10	6	11	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mexico City and surrounding territory	C	21	7	8	9	10	2	15	5	5	5	5	5	5	5	5	5	5	5	5
Morlos State, <sup>1</sup>	D	6	1	8	4	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Morocco (see table below).	D	141	110	30	18	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Netherlands: Rotterdam	D	1	7	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nigeria: Lagos	C	5	95	164	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111
Panama	C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Persia (see table below).	D	40	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38

<sup>1</sup> Newspaper reports of Feb. 4, 1930, show an epidemic of smallpox in Iznikatepe, Morelos State, and vicinity, giving 600 deaths in last two weeks.

<sup>2</sup> On Feb. 1, 1930, 317 cases of smallpox with 102 deaths were reported to date in the Strangani and Balut Islands.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

IC indicates IEEE; D, dinitro-*P*; present

March 7, 1930

Place	August, 1929	Sept., 1929	Octo-ber, 1929	November, 1929			December, 1929			January, 1930		
				1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31
Bolivian Congo	C	725	19		42							
Dahomey	D											
Indo-China (see also table above)	C	64	4		10							
Ivory Coast	C	128			245							
Sudan (French)	C	2										
Syria; Beirut	C	37	28	22	22	P						
	D	1		6	6							
Place	August, 1929	Sept., 1929	Octo-ber, 1929	November, 1929			December, 1929			January, 1930		
Bolivia: La Paz	Au-gust, 1929	Septem-ber, 1929	Octo-ber, 1929	No-vem-ber, 1929			De-cem-ber, 1929			Jan-u-ary, 1930		
British East Africa (see also table above)	C											
Kenya	C	60	65	22								
Chosen	C	1		278								
Morocco: Durango (see also table above)	D	1	2	2	2	4	12					

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CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPEUS PELLER

[IC indicates cases; D, deaths; P, present.]

Week ender

